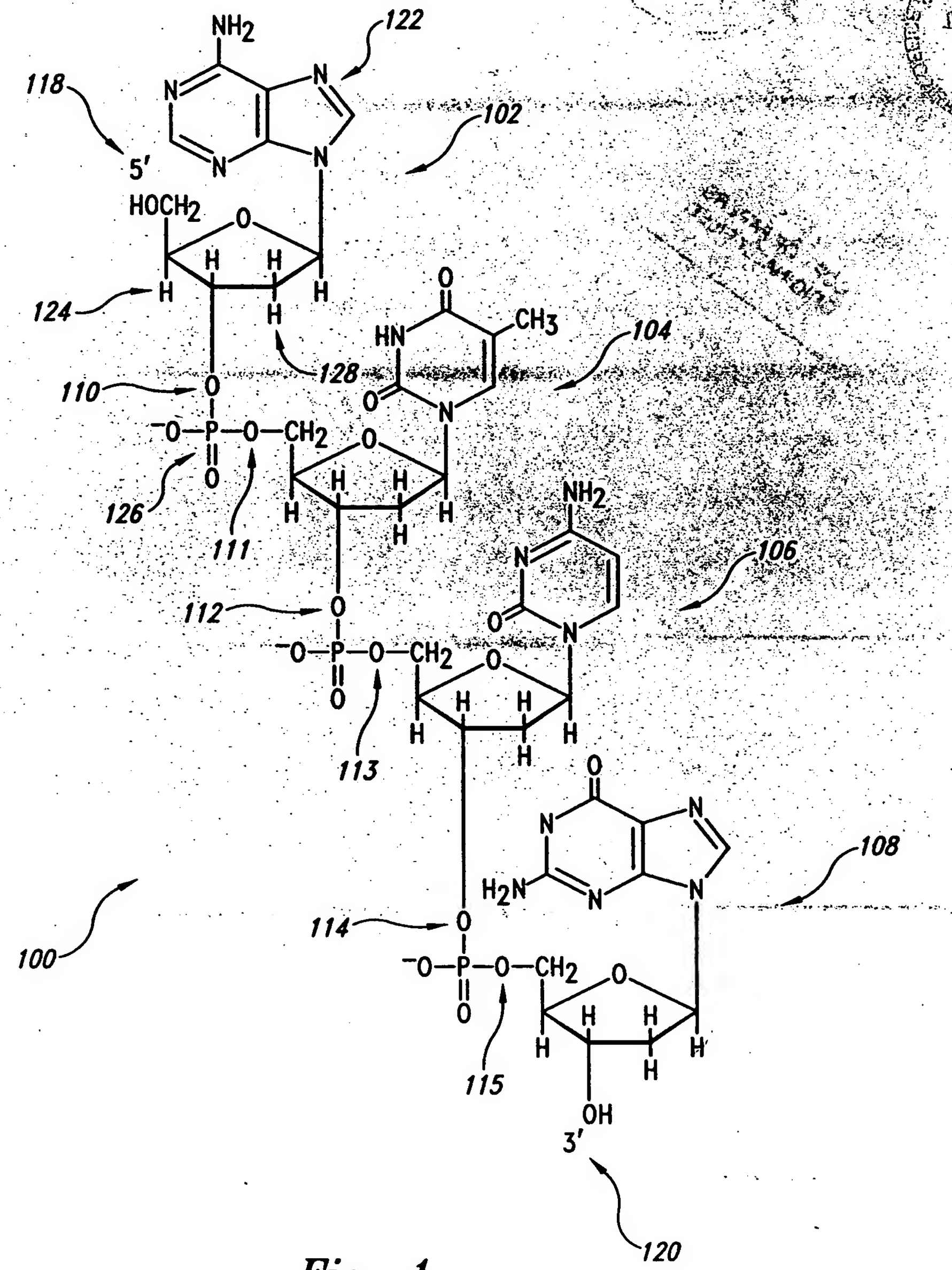
NH2
122
118
5'
102
HOCH2
O
H
H
H
H
124
128
O
HN
CH3
104
110
O
N
O
O
P
O
CH2
O
H
H
H
H
H
126
111
NH2
106
112
O
N
O
O
P
O
CH2
O
H
H
H
H
H
113
O
N
N
108
H2N
N
N
114
O
O
P
O
CH2
O
H
H
H
H
H
115
OH
3'
100
120

Fig. 1

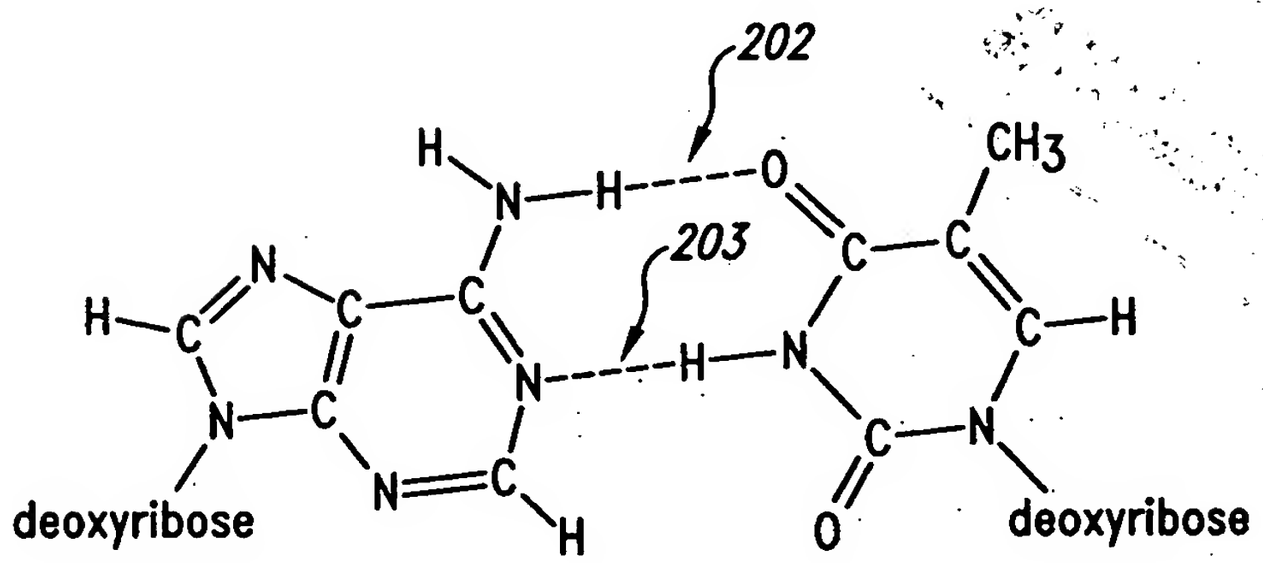
202
203
H
N
H
O
CH3
C
C
H
N
C
C
N
H
N
C
C
H
N
C
N
C
N
C
N
C
H
deoxyribose
deoxyribose

Fig. 2A

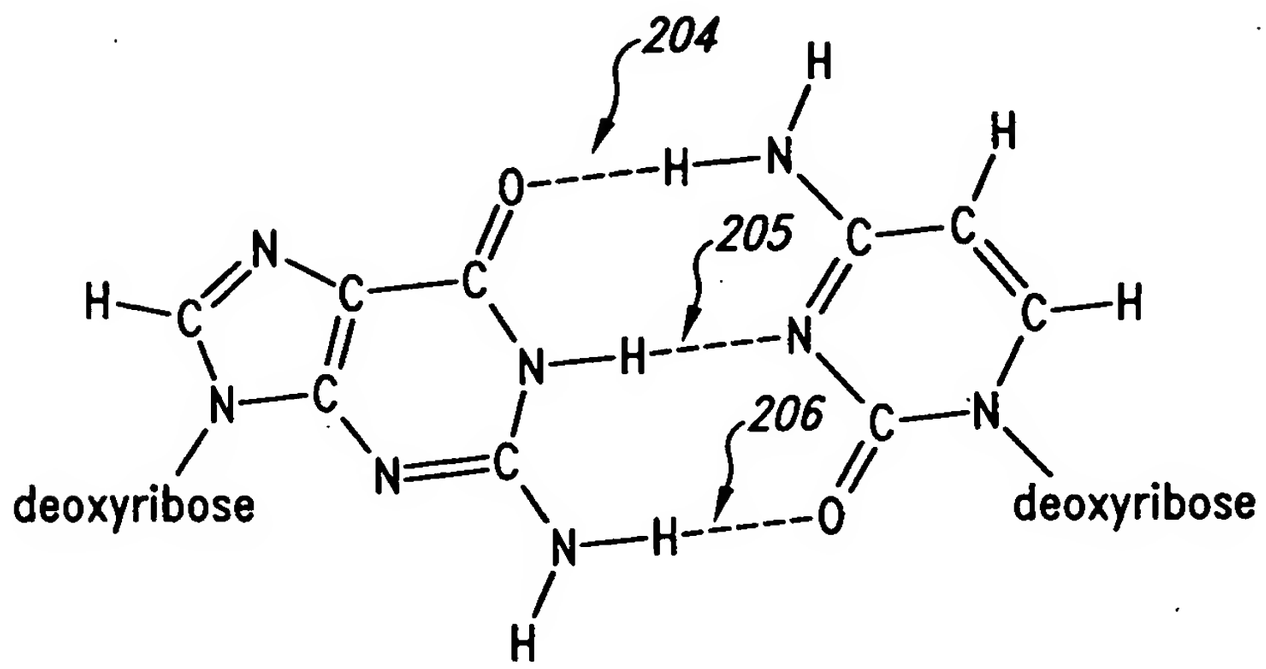
204
205
206
H
N
H
O
C
C
H
N
C
C
N
H
N
C
C
H
N
C
N
C
N
C
N
C
H
deoxyribose
deoxyribose
N
H
O
H

Fig. 2B

PATENT OFFICE AUG 8 1 2003

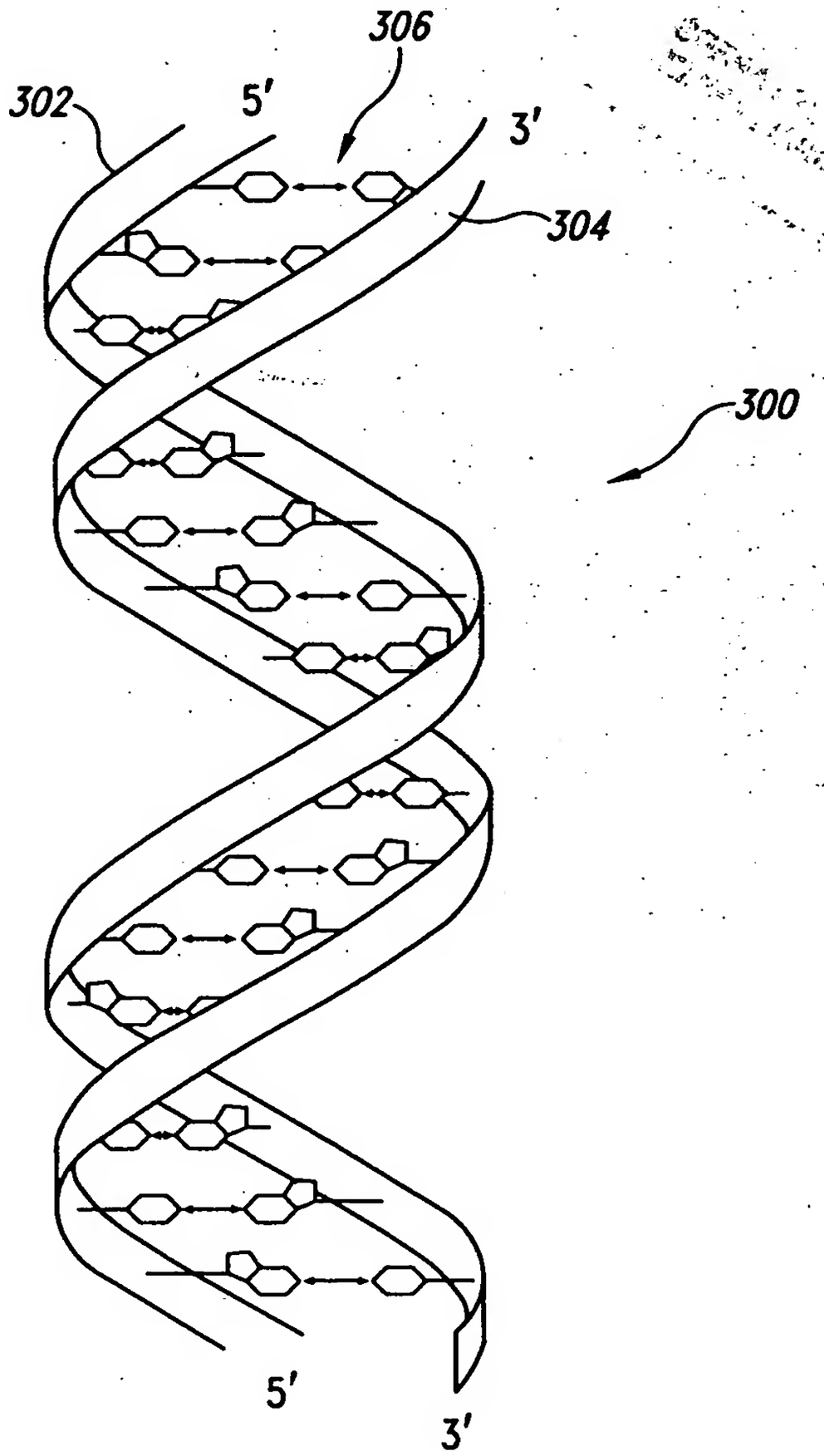

Fig. 3

3910

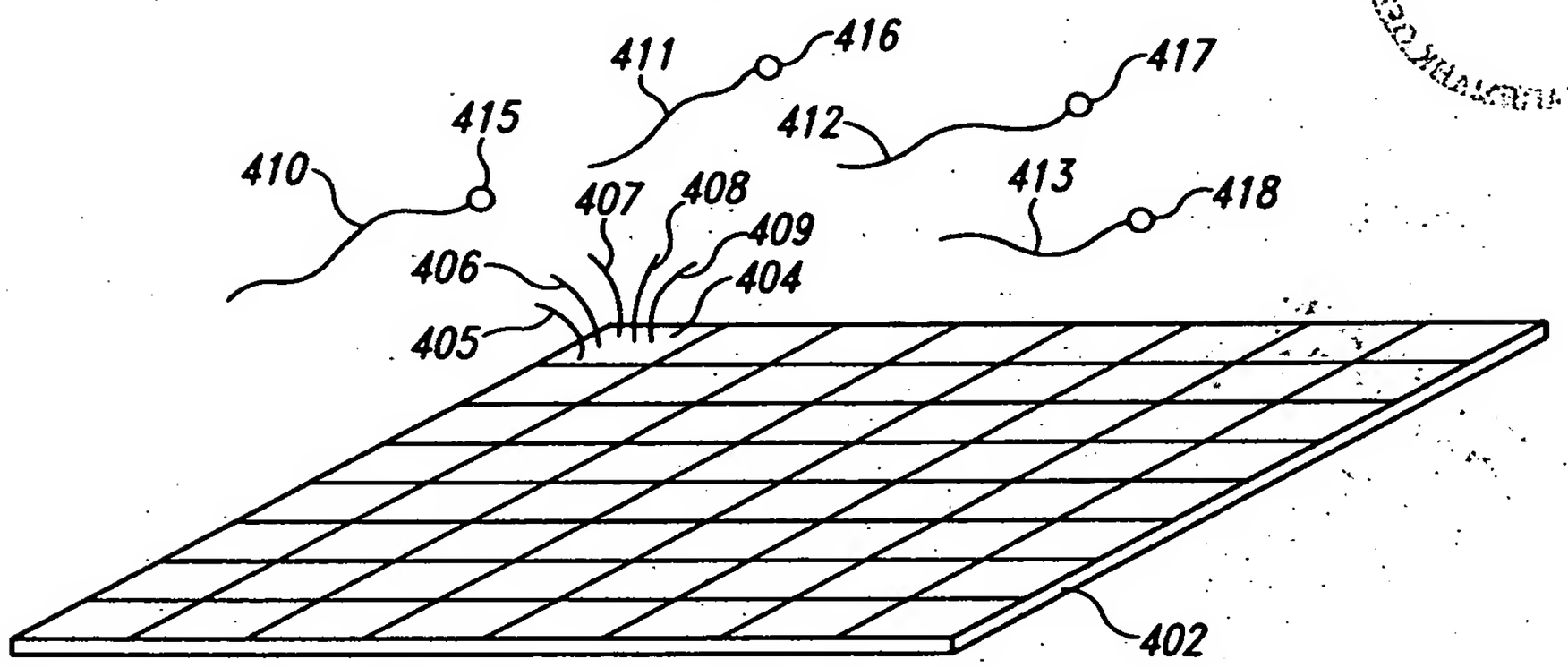

Fig. 4

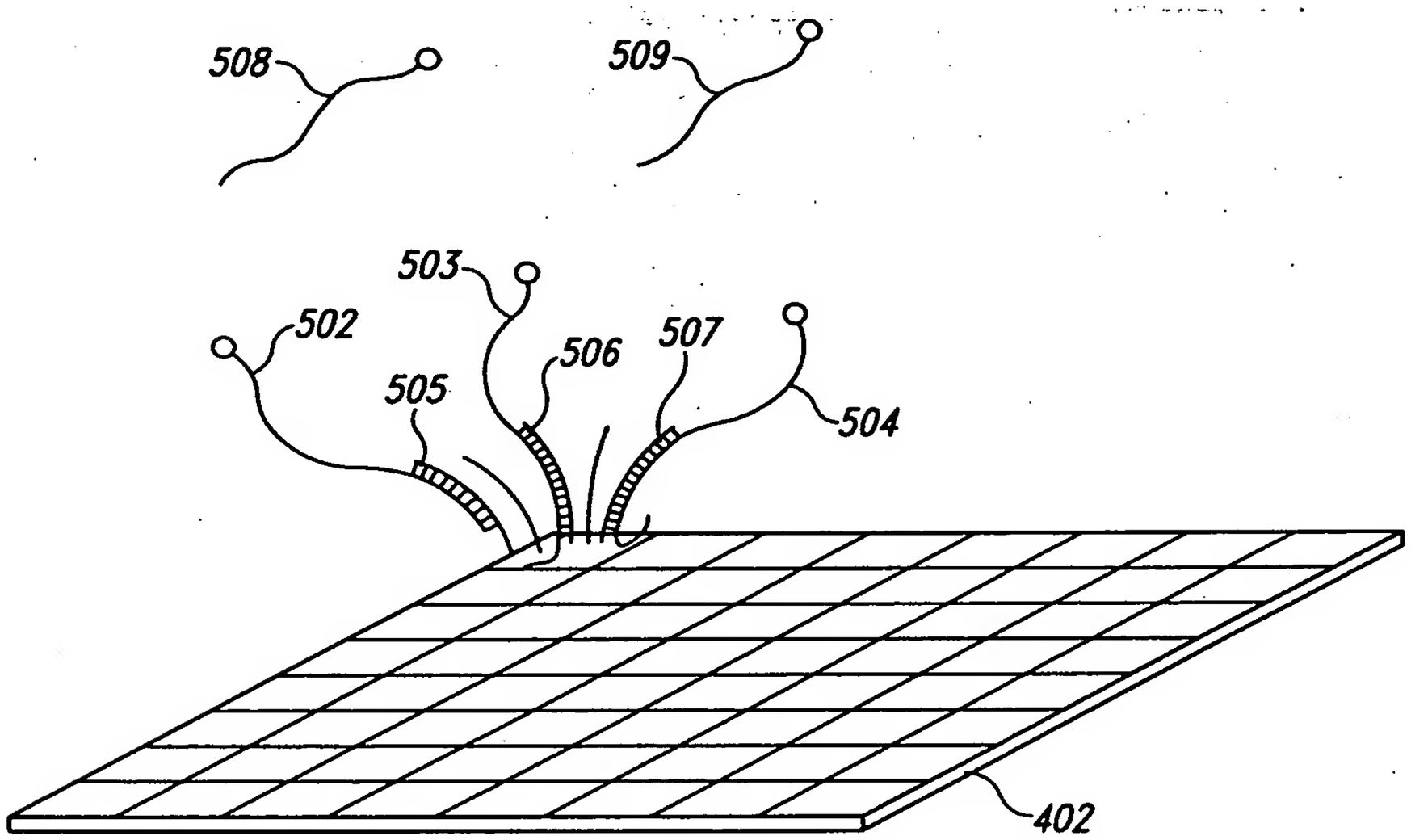

Fig. 5

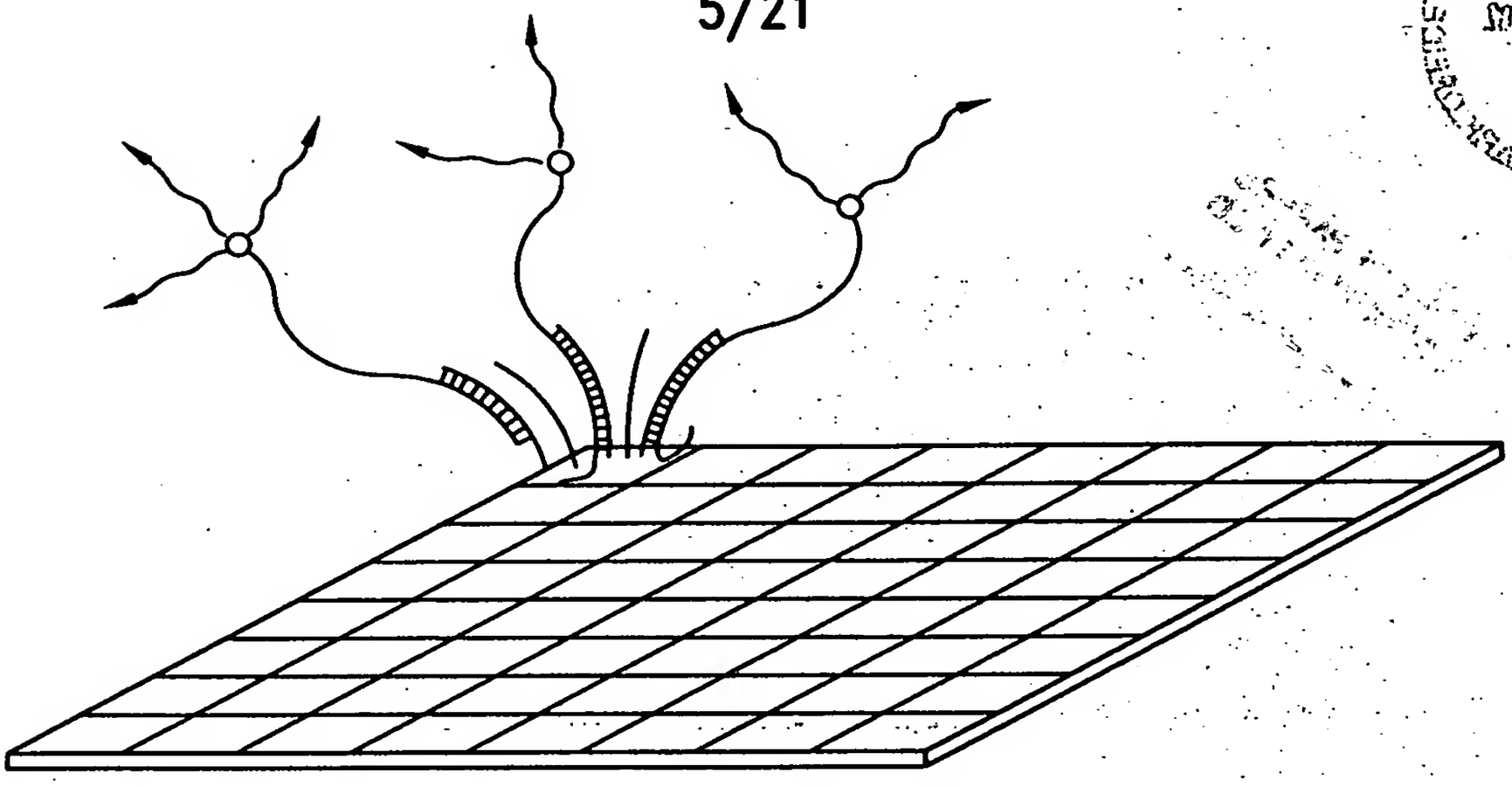

Fig. 6

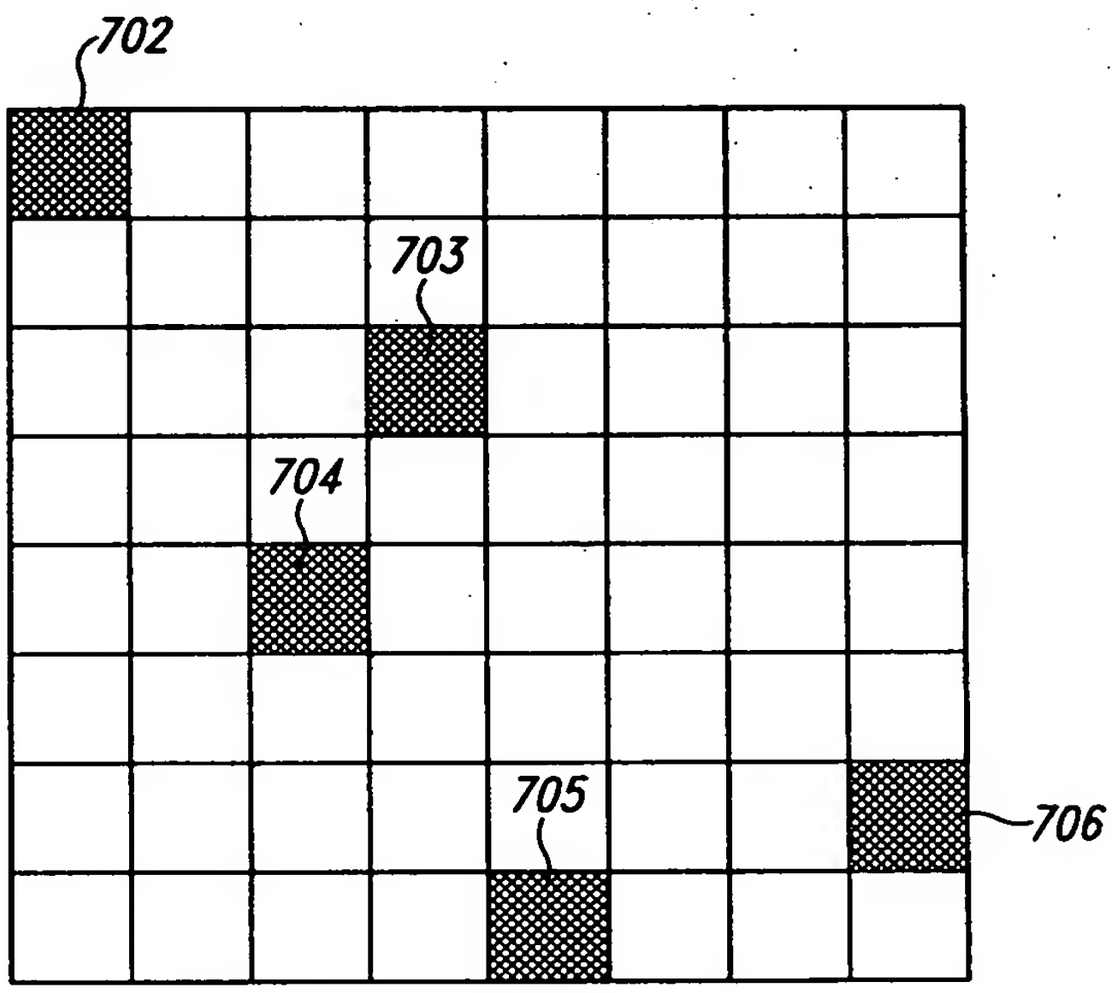

Fig. 7

PATENT & TRADEMARK OFFICE

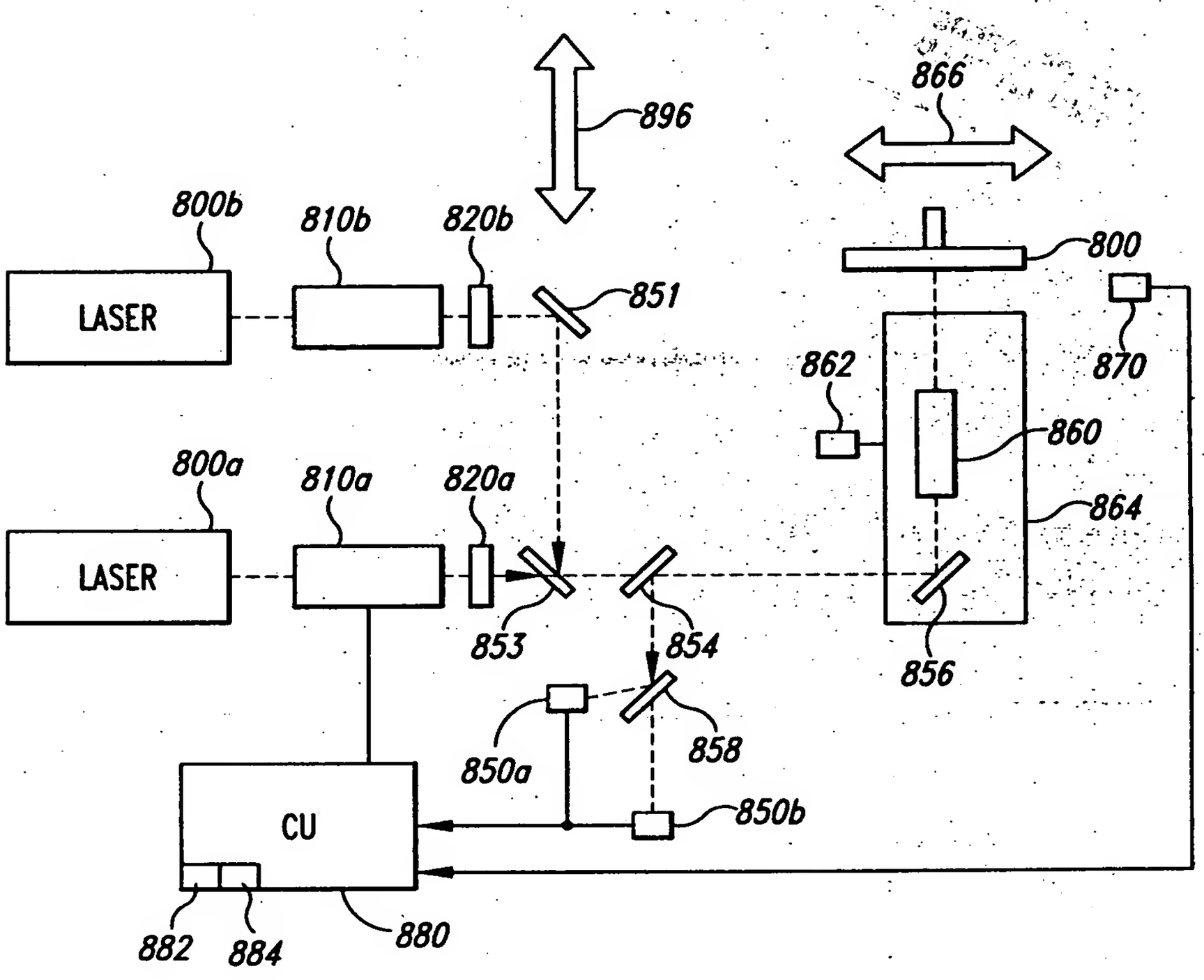

Fig. 8

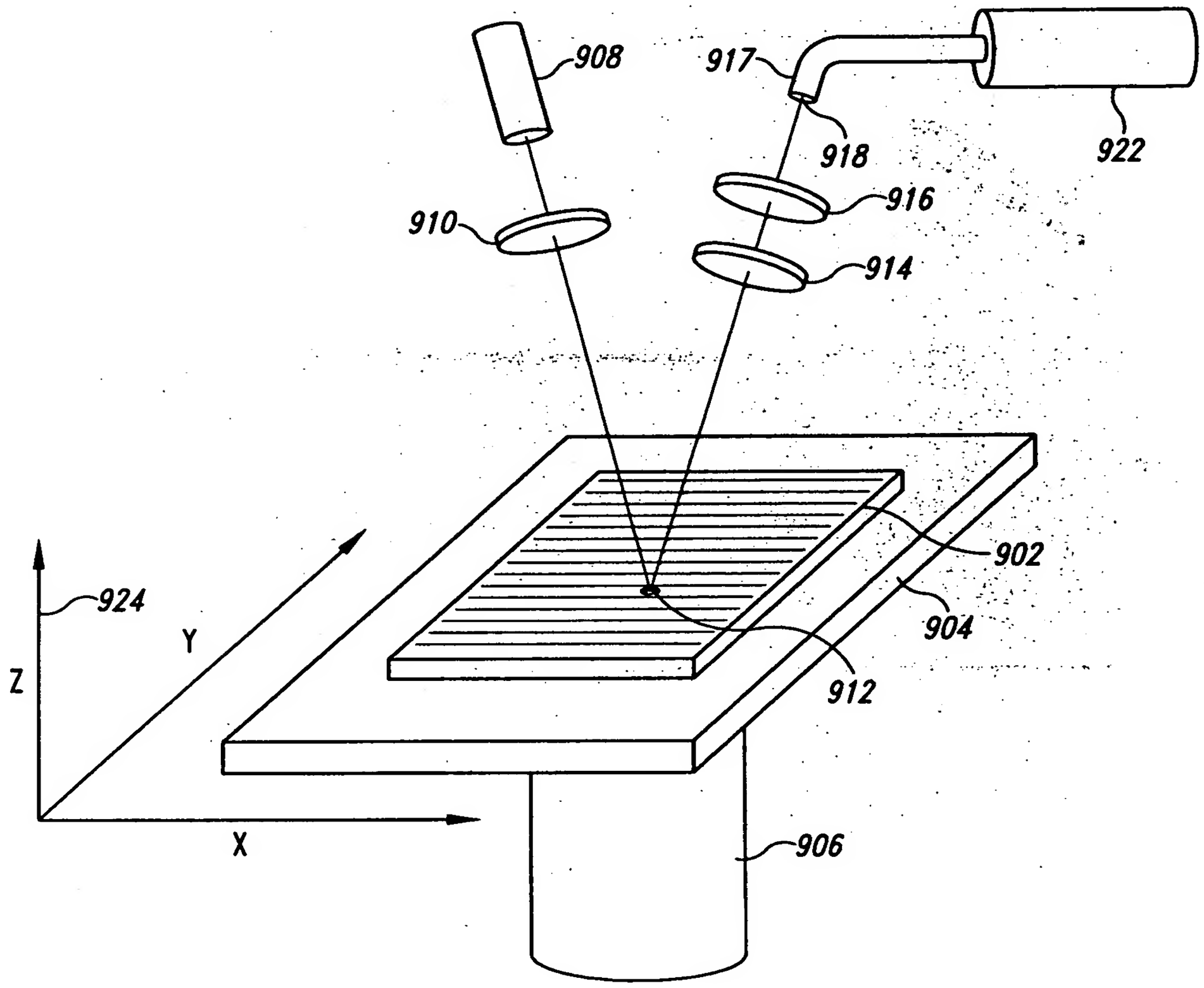

Fig. 9

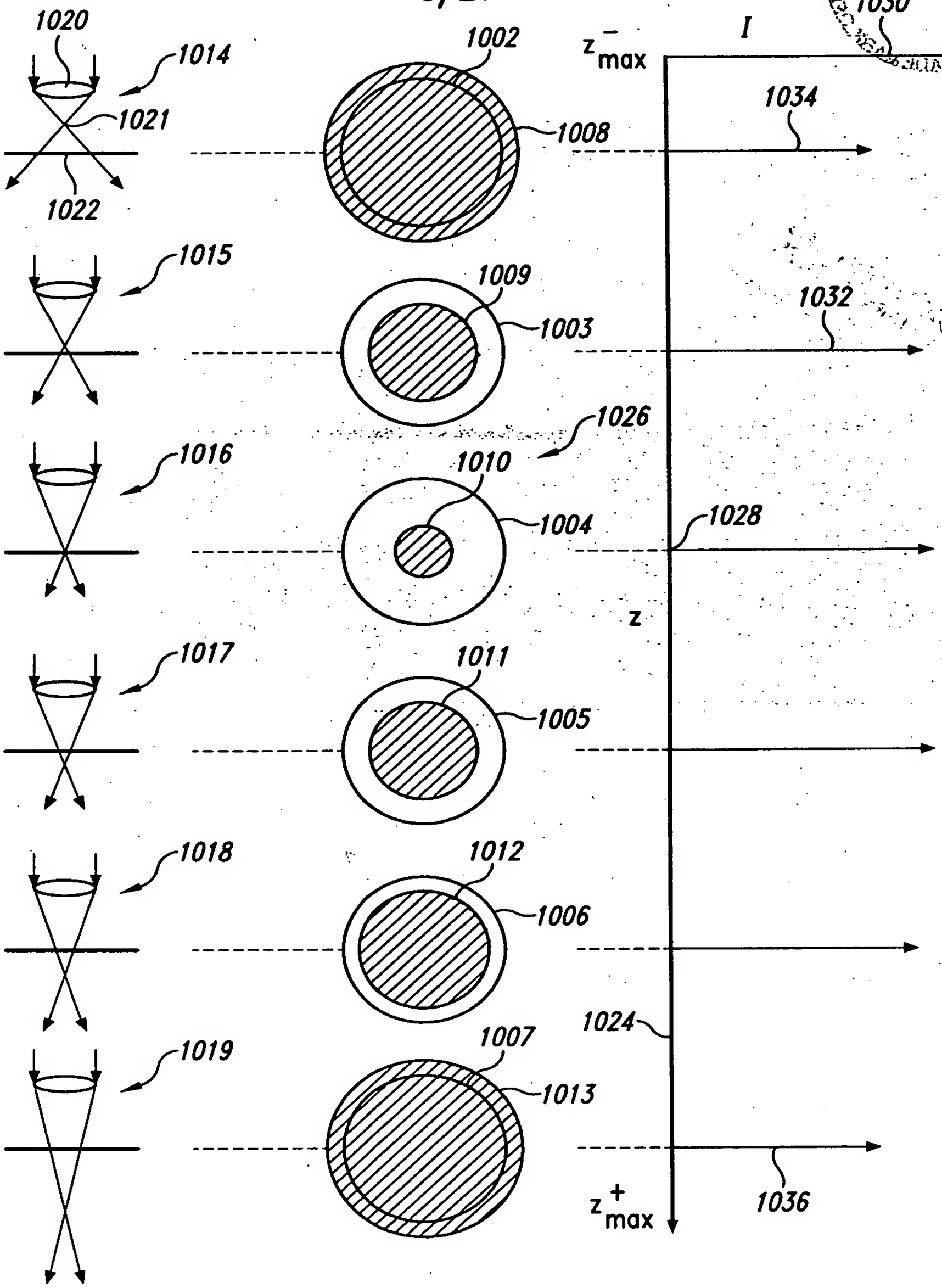
1020
1014
1021
1022
1002
1008
1030
I
z max
1034
1015
1009
1003
1032
1026
1016
1010
1004
1028
z
1017
1011
1005
1018
1012
1006
1024
1019
1007
1013
z max
1036

Fig. 10

10086743 - 072602

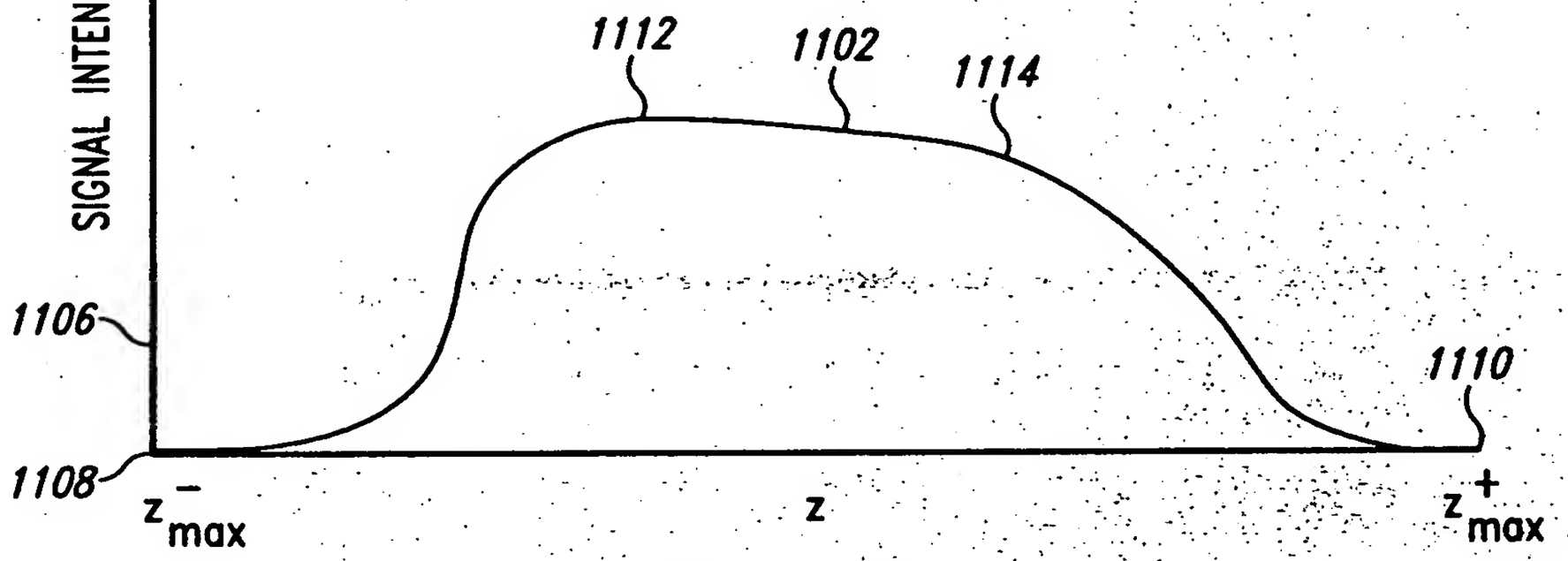

Fig. 11

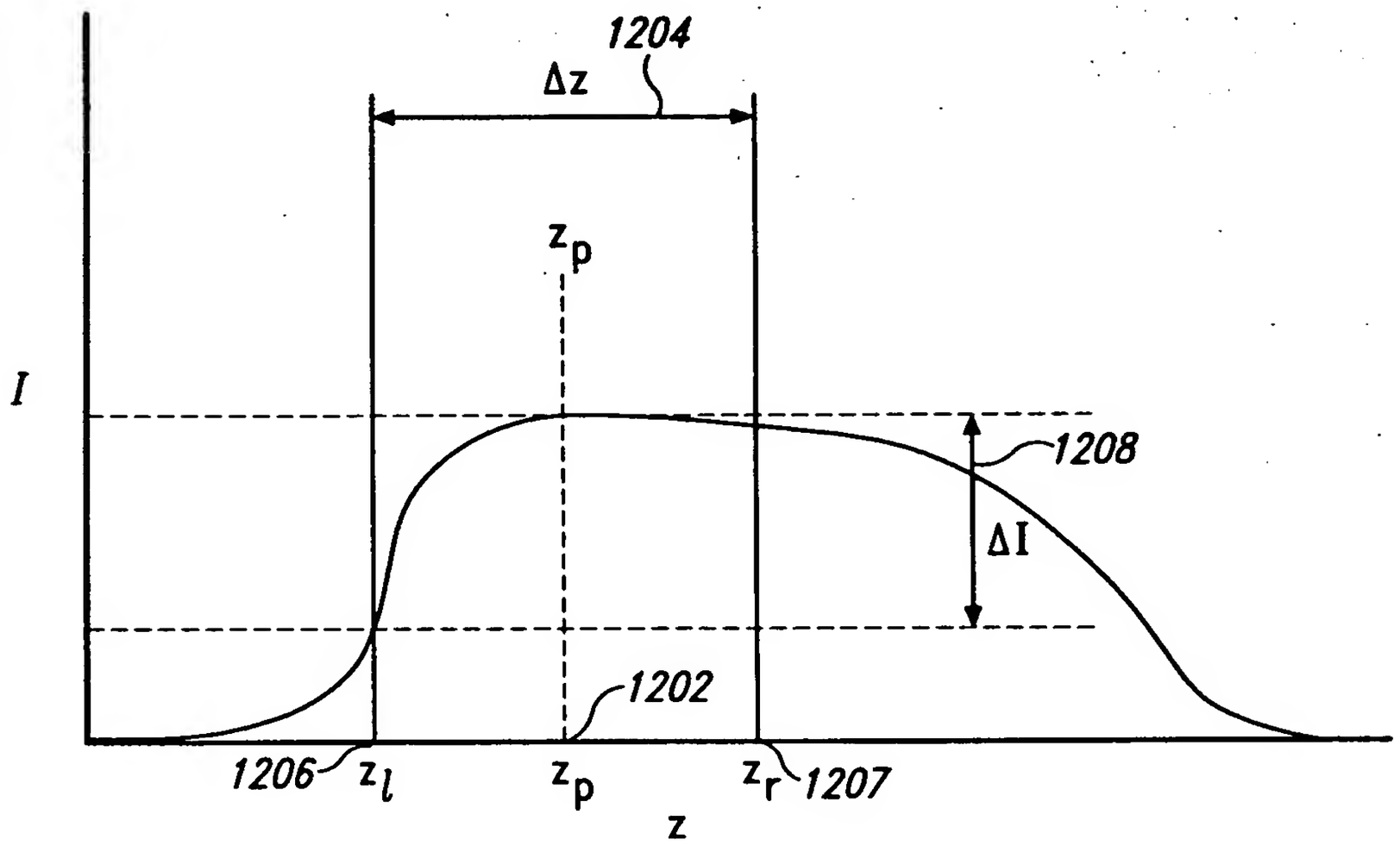

Fig. 12

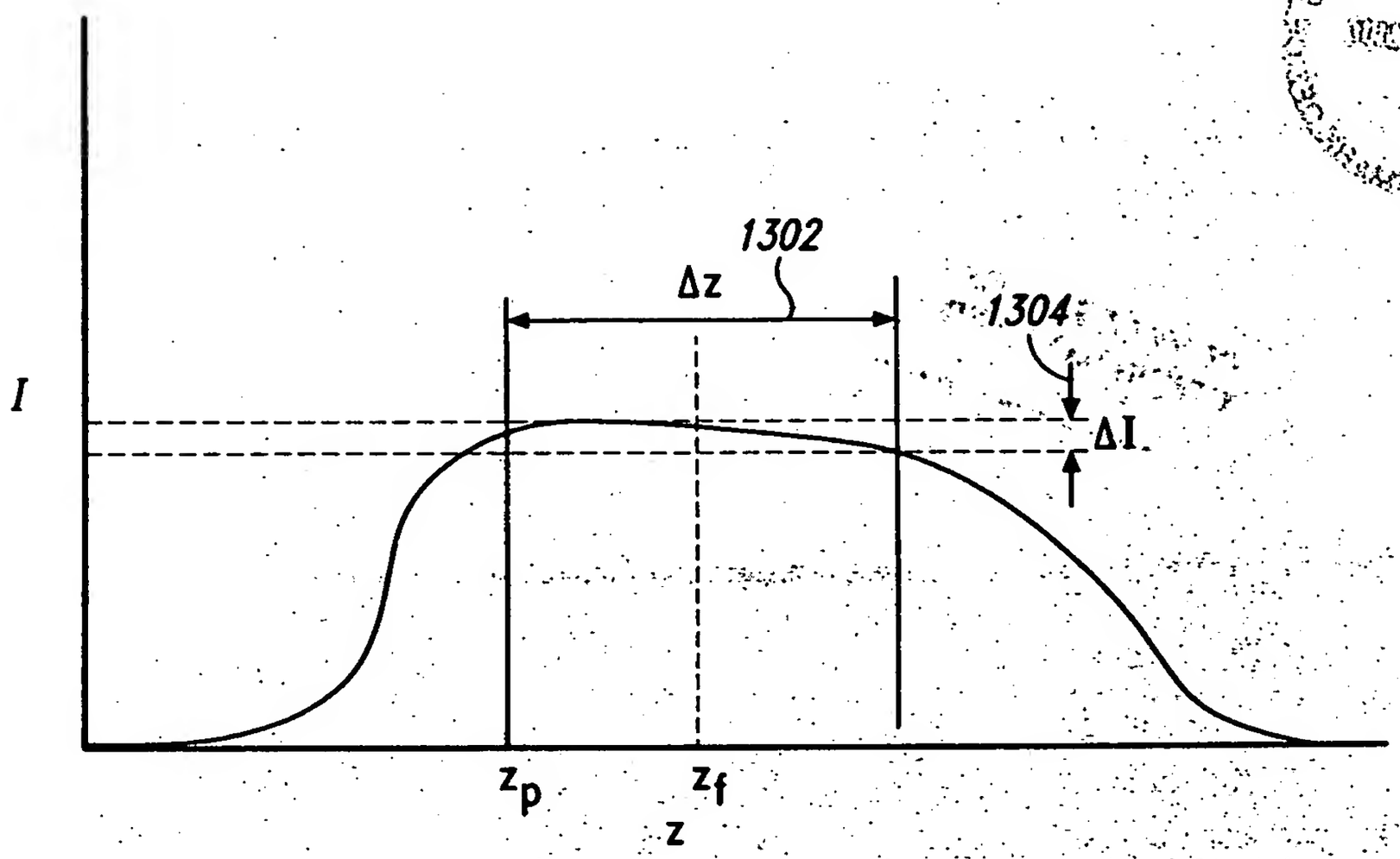

Fig. 13

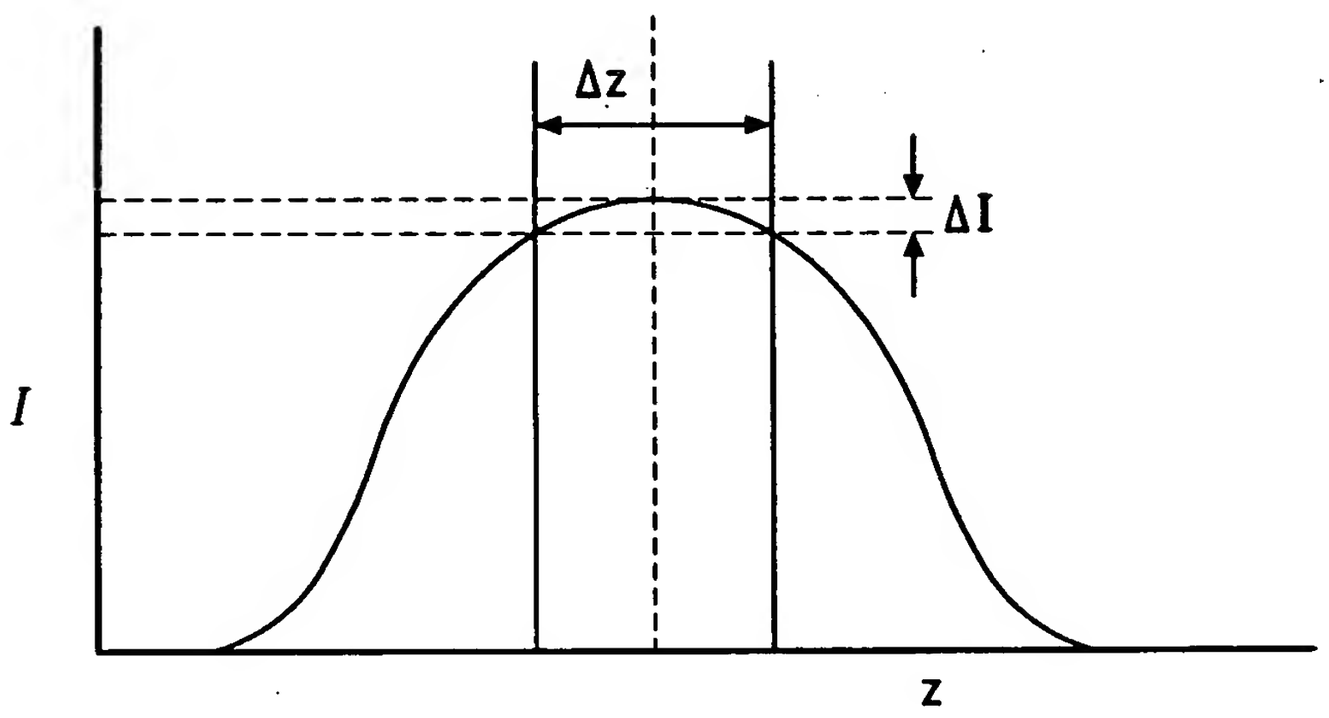

Fig. 14

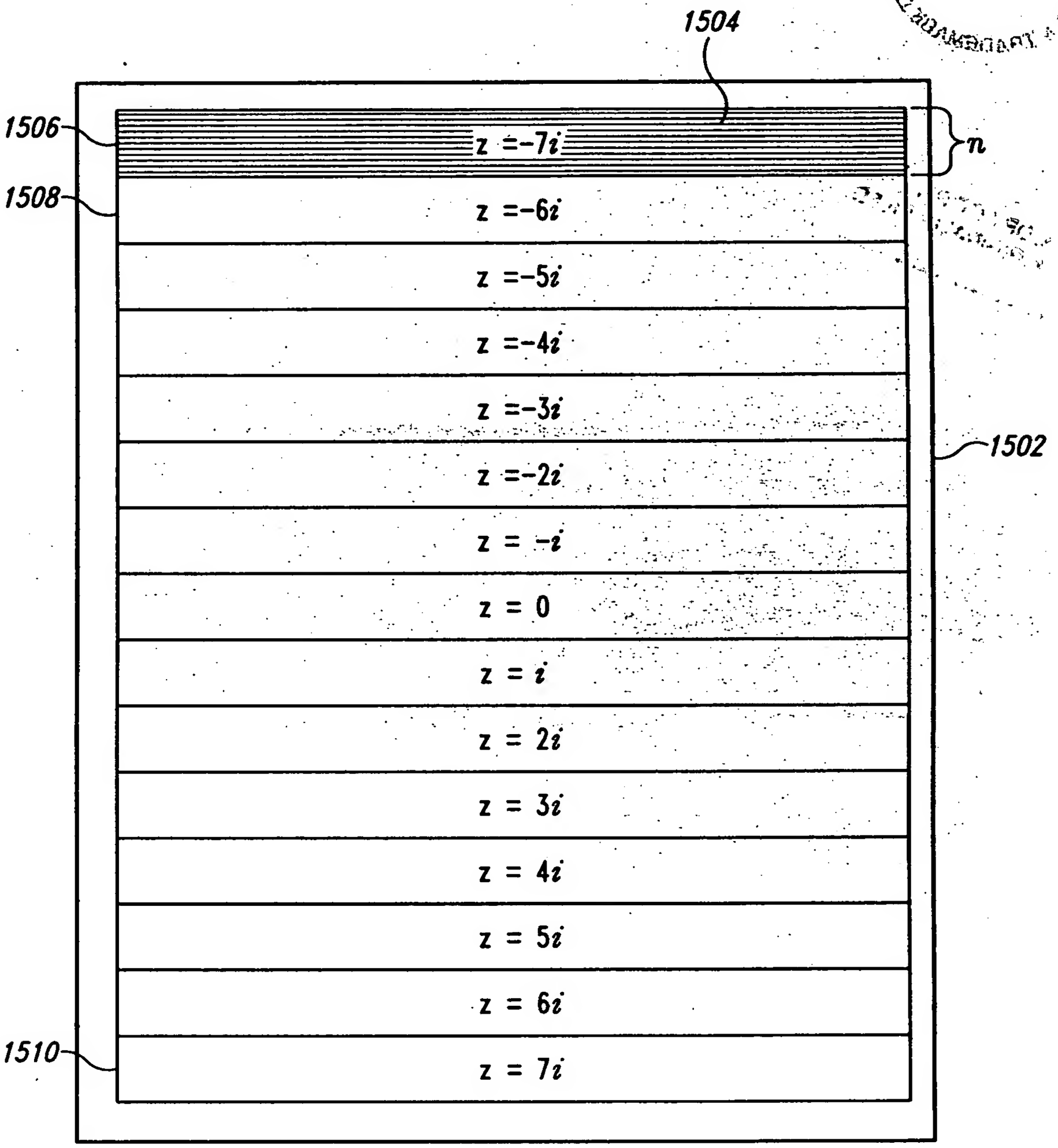
1504
1506
1508
1510
1502
n
z =-7i
z =-6i
z =-5i
z =-4i
z =-3i
z =-2i
z = -i
z = 0
z = i
z = 2i
z = 3i
z = 4i
z = 5i
z = 6i
z = 7i

Fig. 15

10/086743 .071502

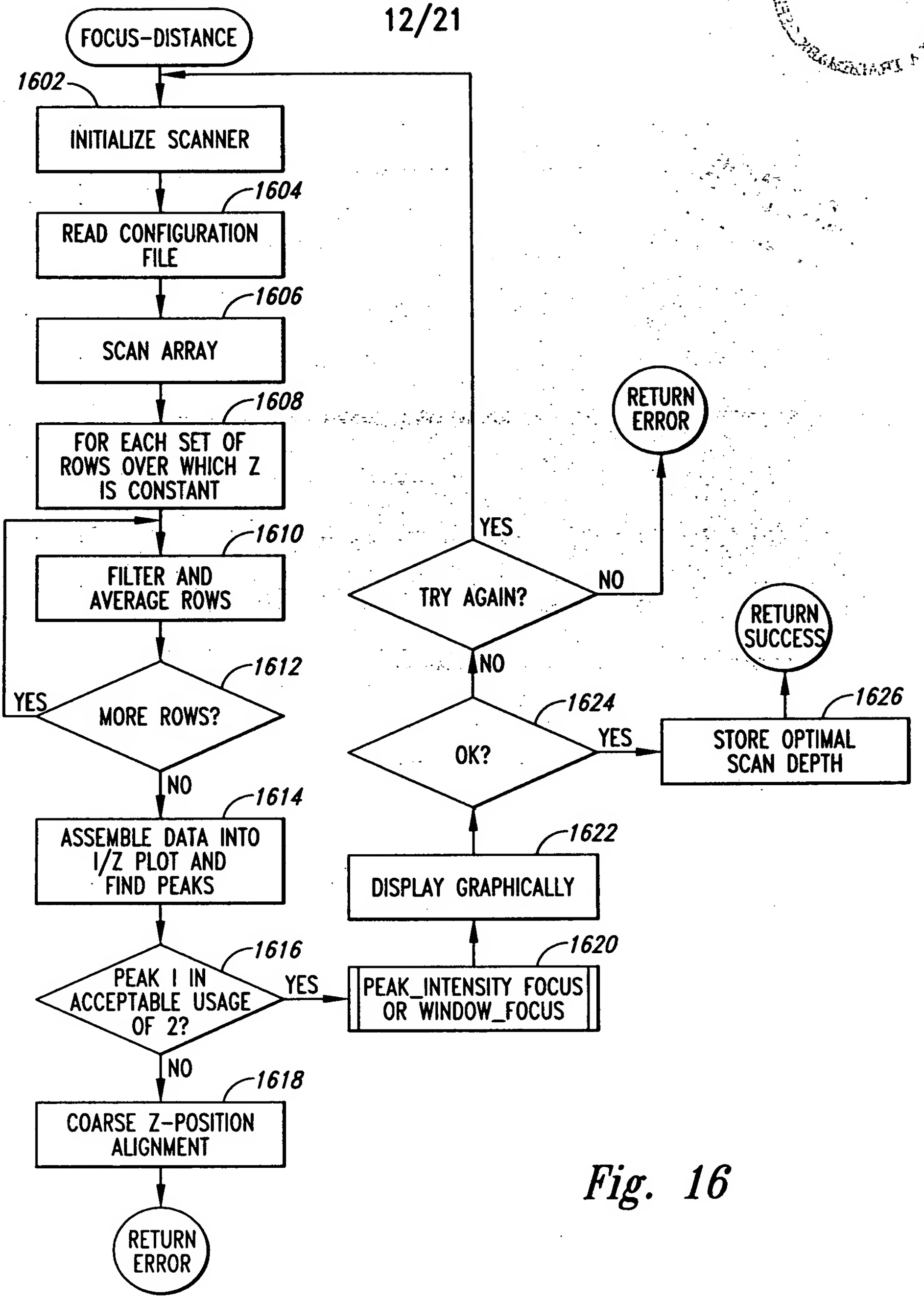

Fig. 16

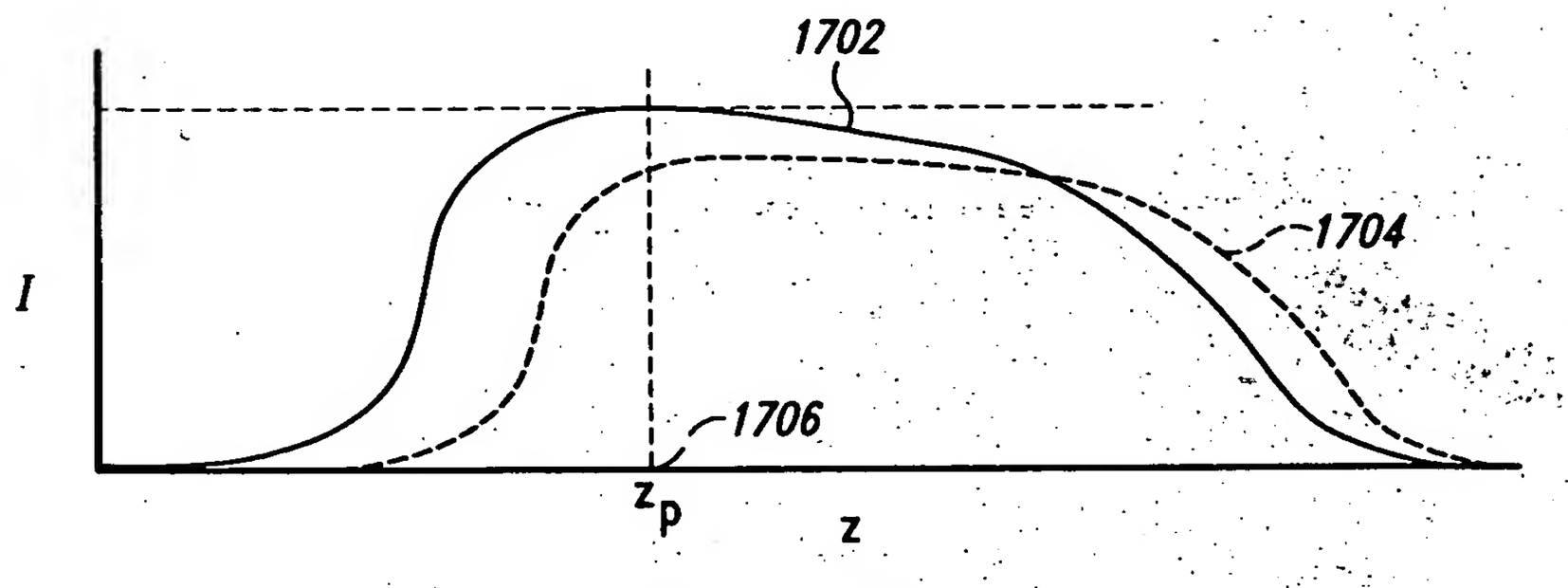

Fig. 17

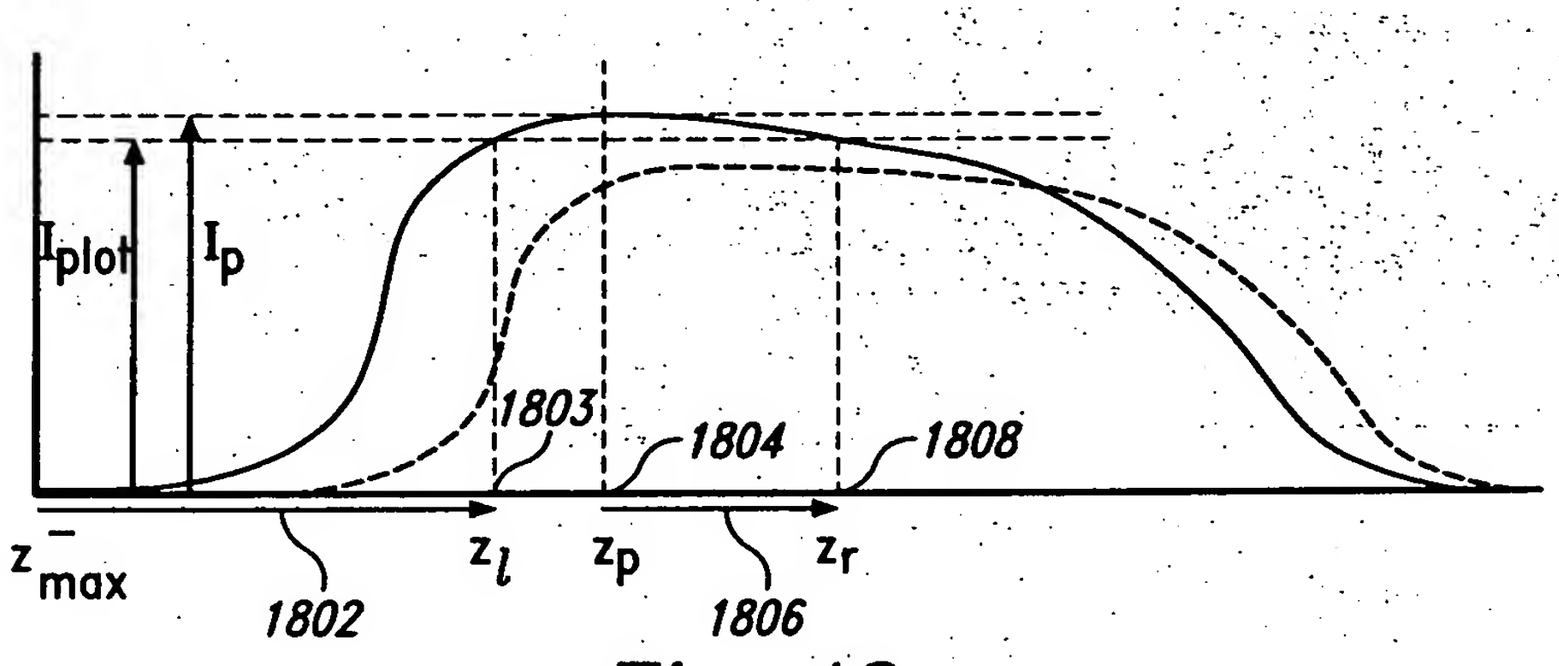

Fig. 18

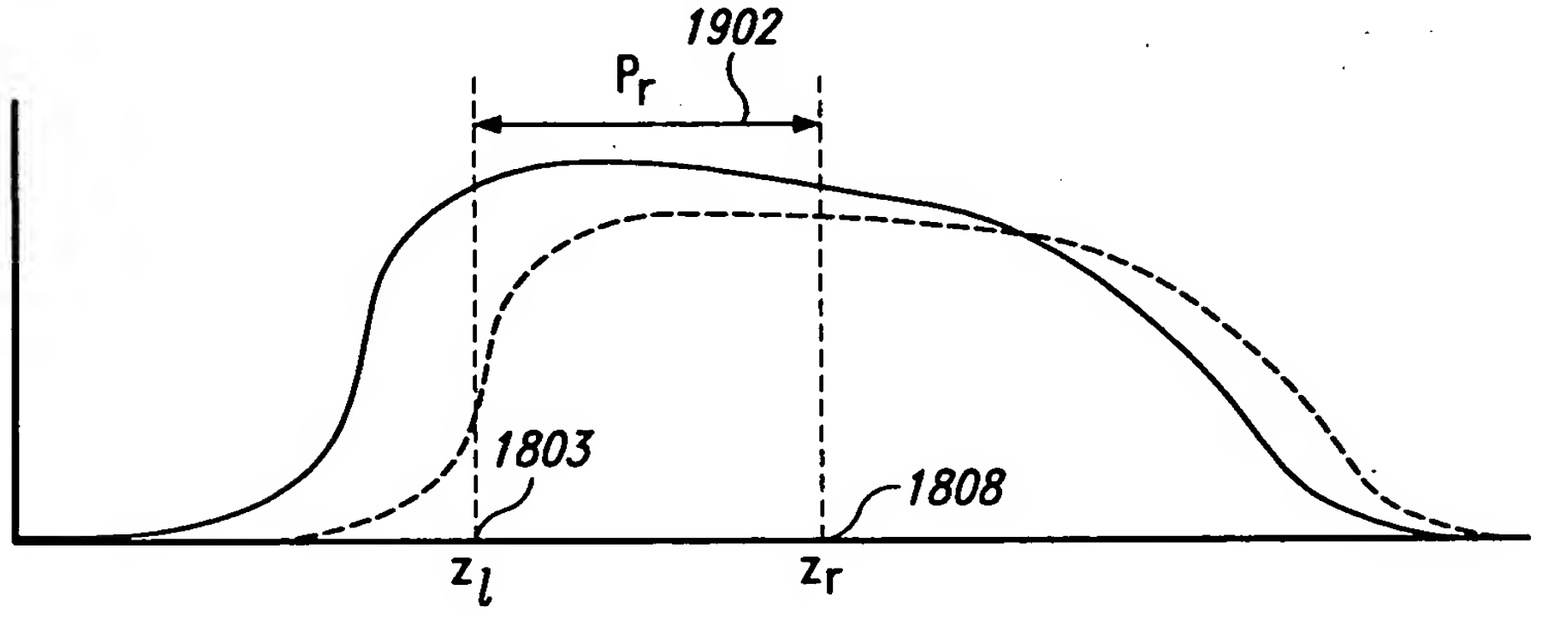

Fig. 19

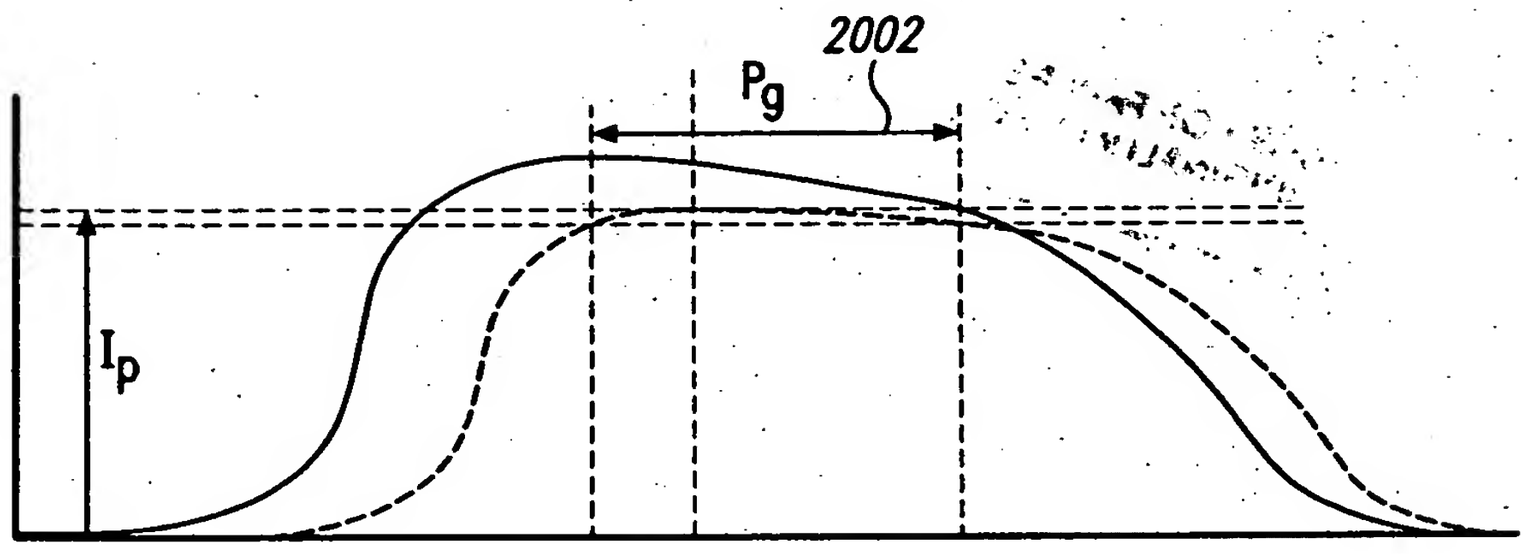

Fig. 20

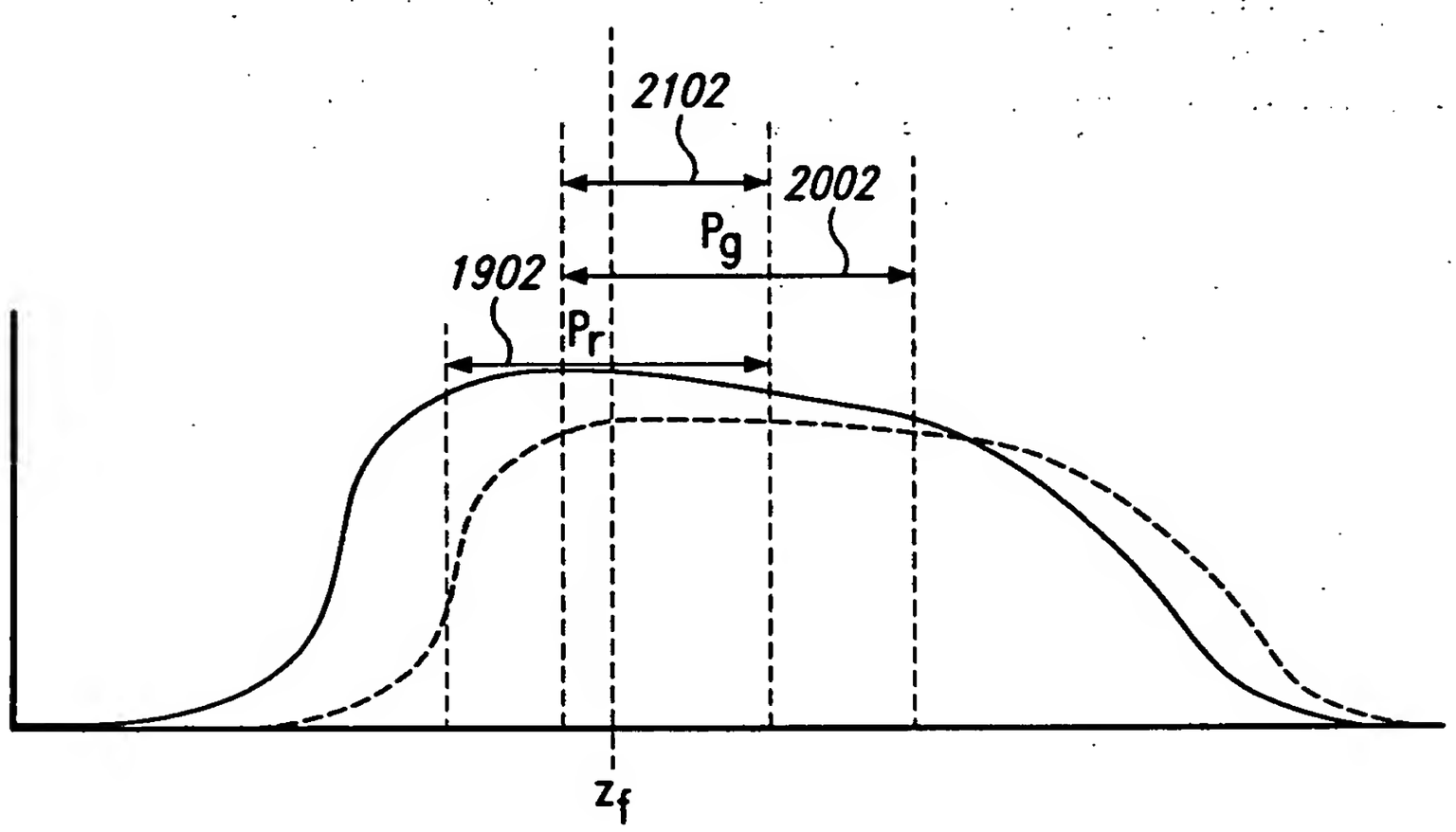

Fig. 21

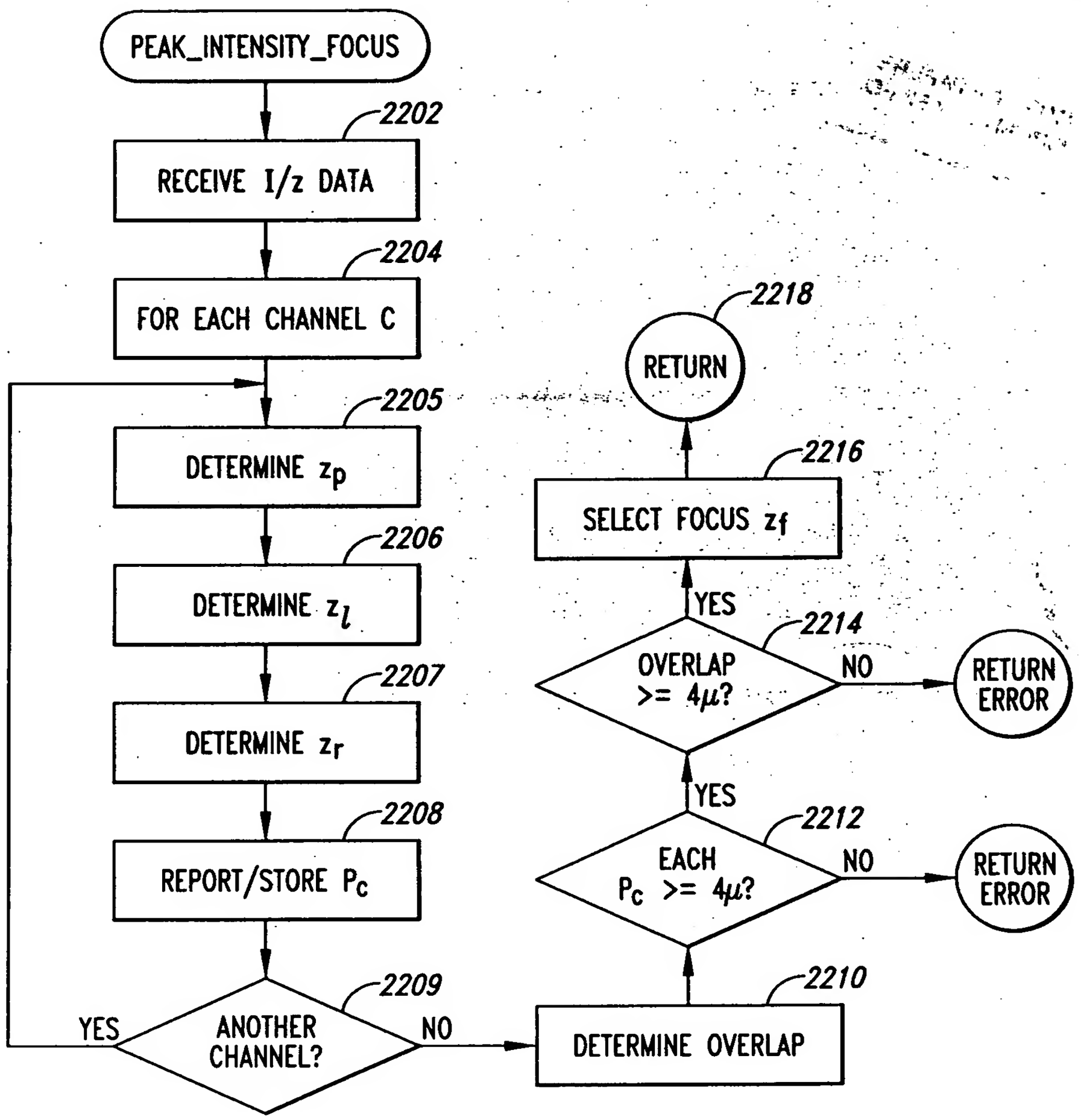
PEAK_INTENSITY_FOCUS
2202
RECEIVE I/z DATA
2204
FOR EACH CHANNEL C
2205
DETERMINE z_p
2206
DETERMINE z_l
2207
DETERMINE z_r
2208
REPORT/STORE P_c
2209
ANOTHER CHANNEL?
YES
NO
2210
DETERMINE OVERLAP
2212
EACH P_c >= 4μ?
NO
RETURN ERROR
YES
2214
OVERLAP >= 4μ?
NO
RETURN ERROR
YES
2216
SELECT FOCUS z_f
2218
RETURN

Fig. 22

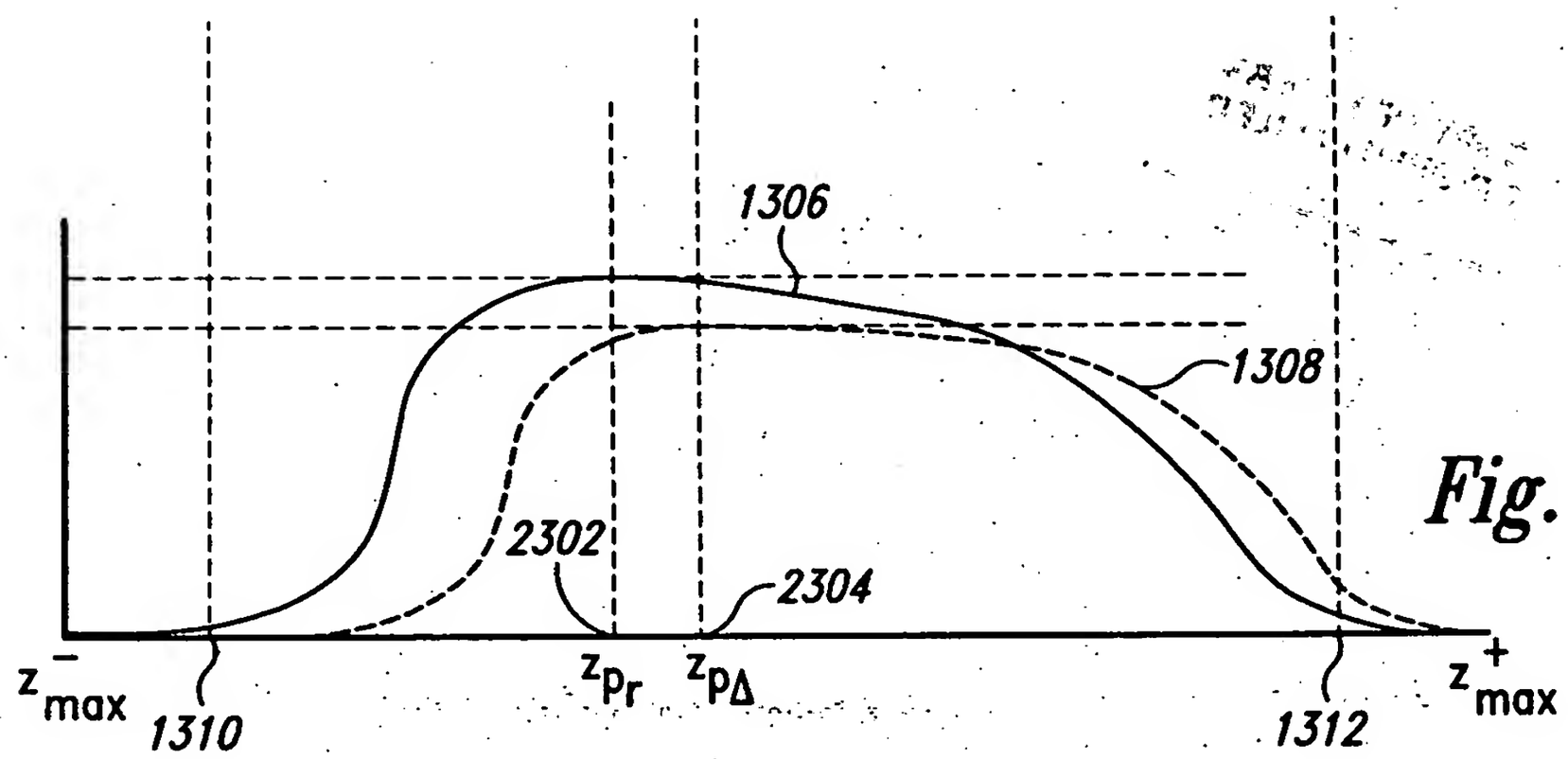

Fig. 23

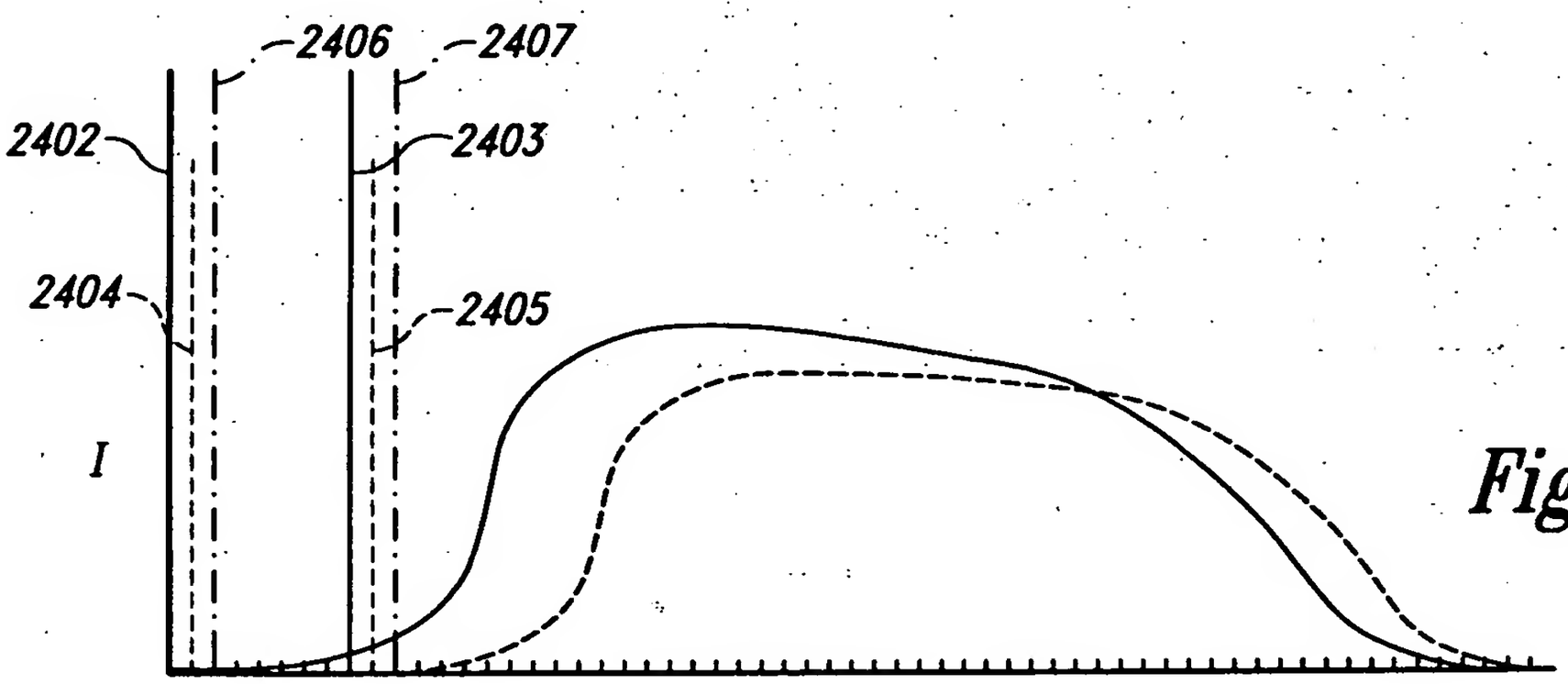

Fig. 24

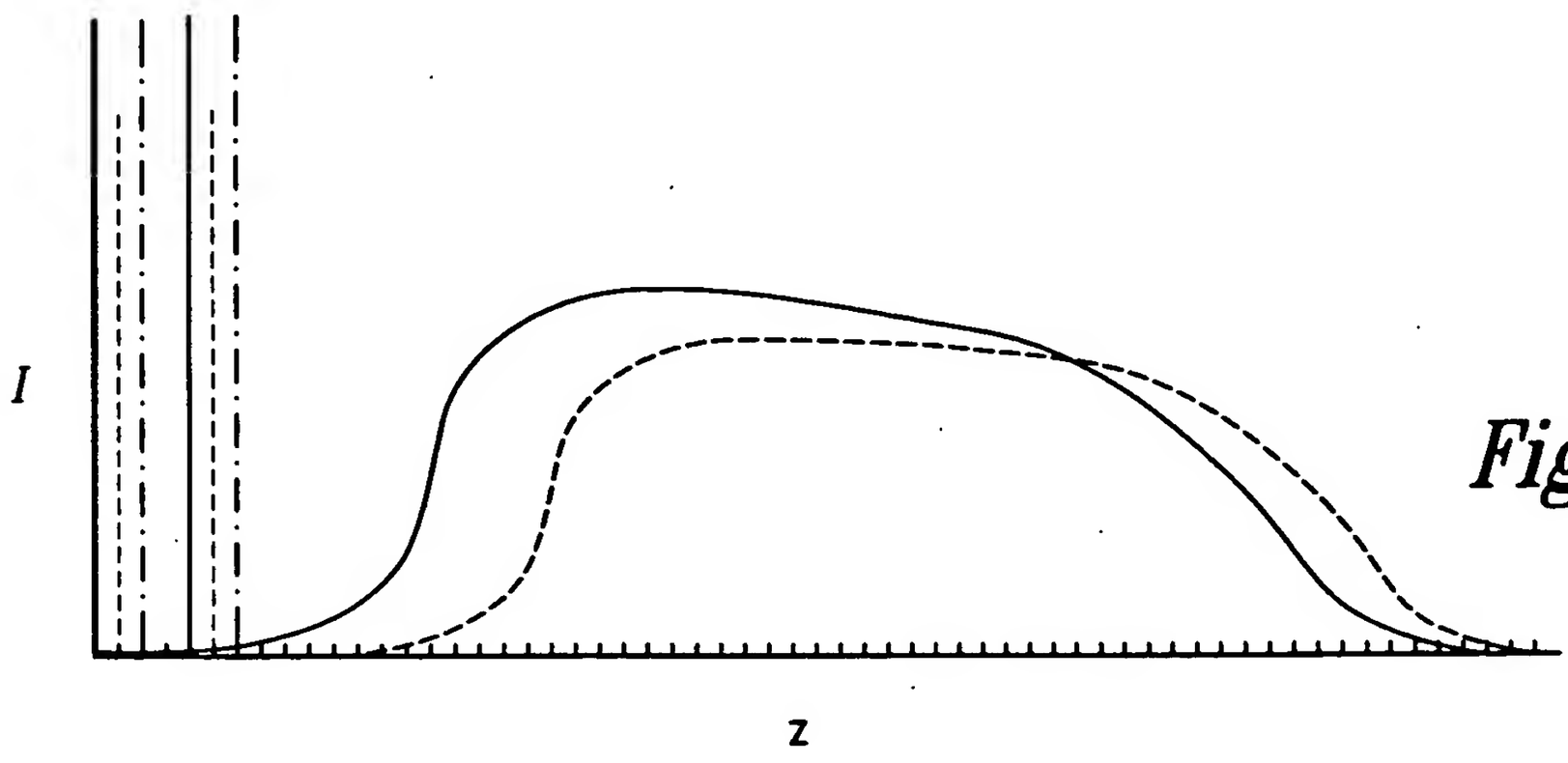

Fig. 25

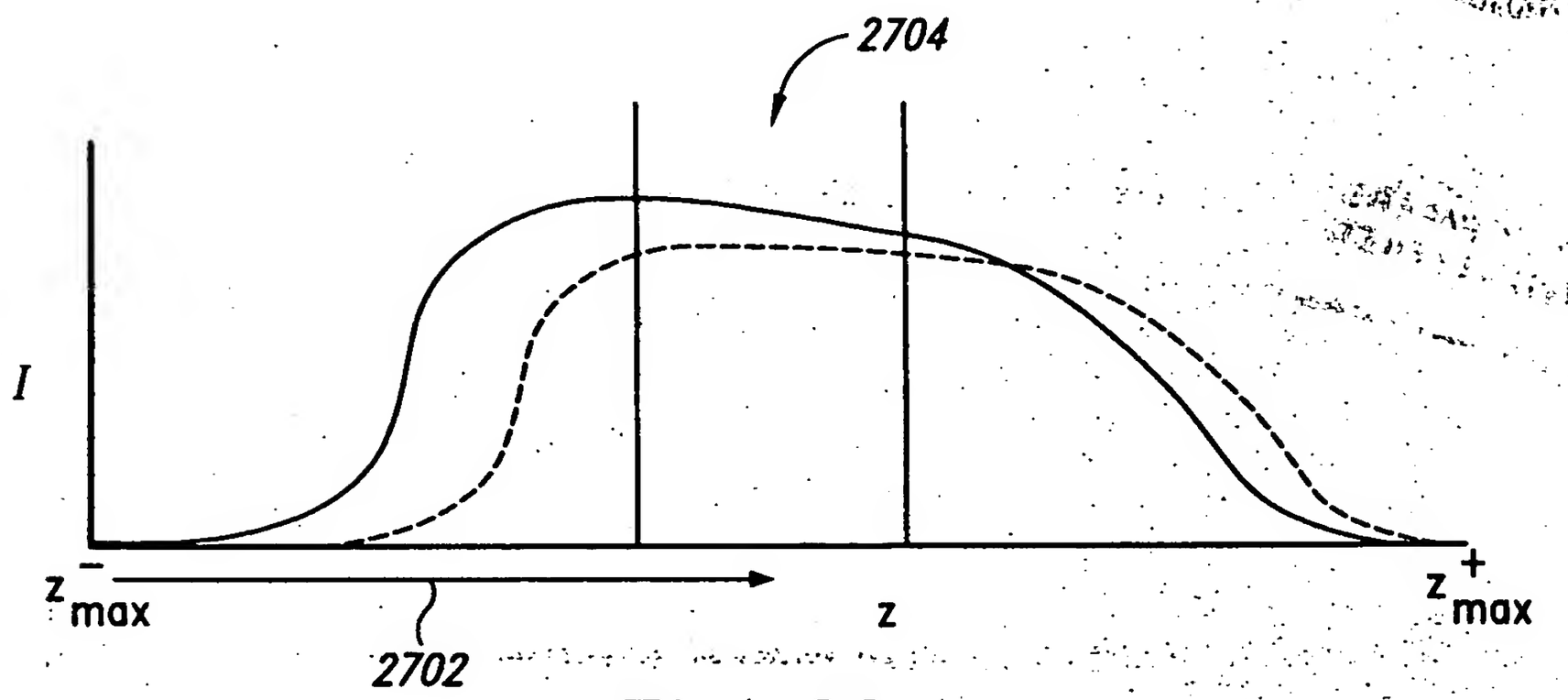

Fig. 26

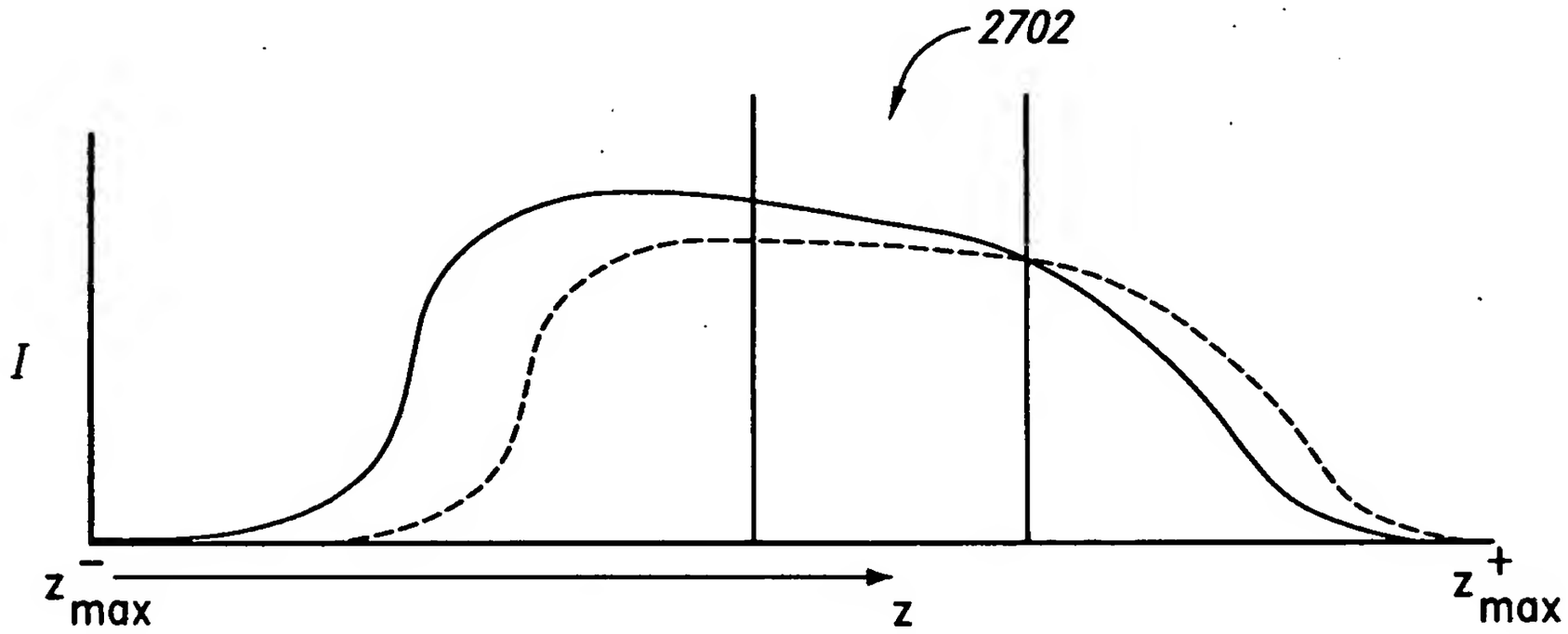

Fig. 27

PATENT 2910

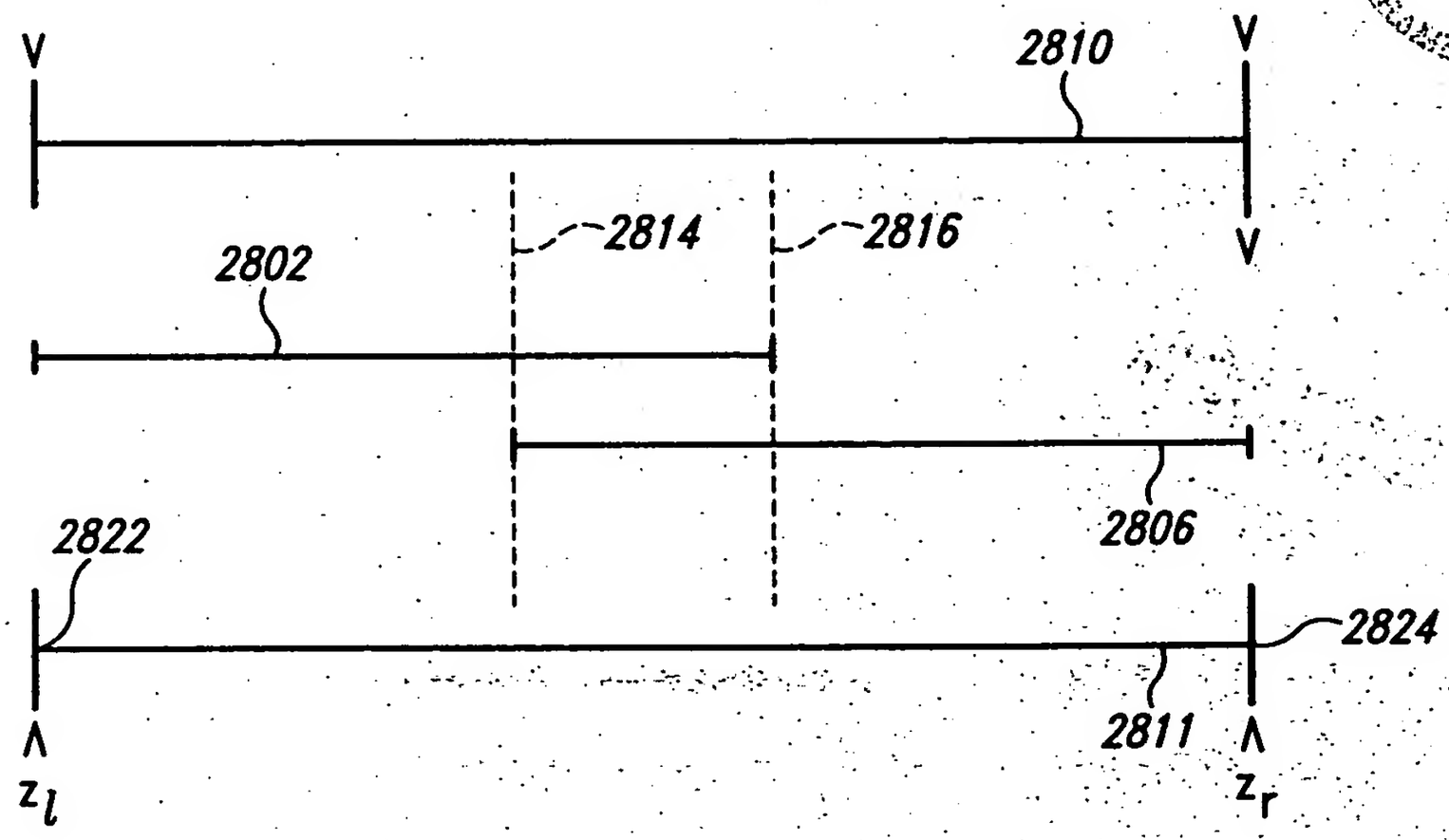

Fig. 28A

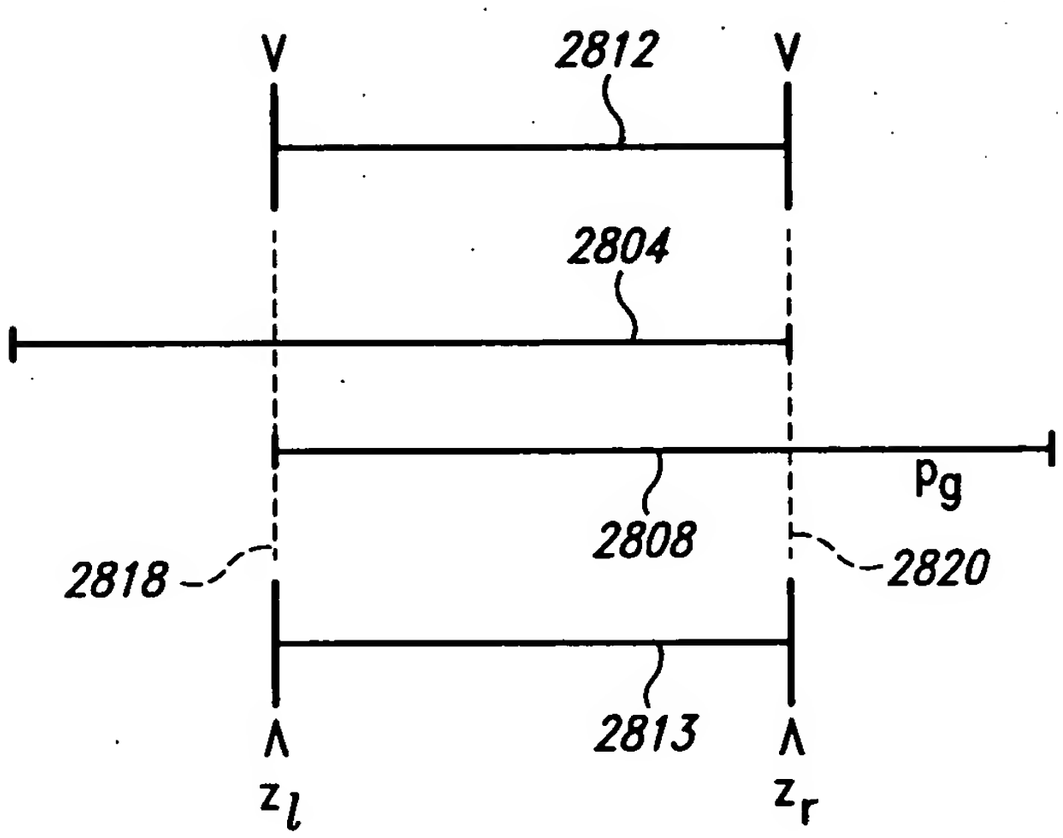

Fig. 28B

10020335-071602

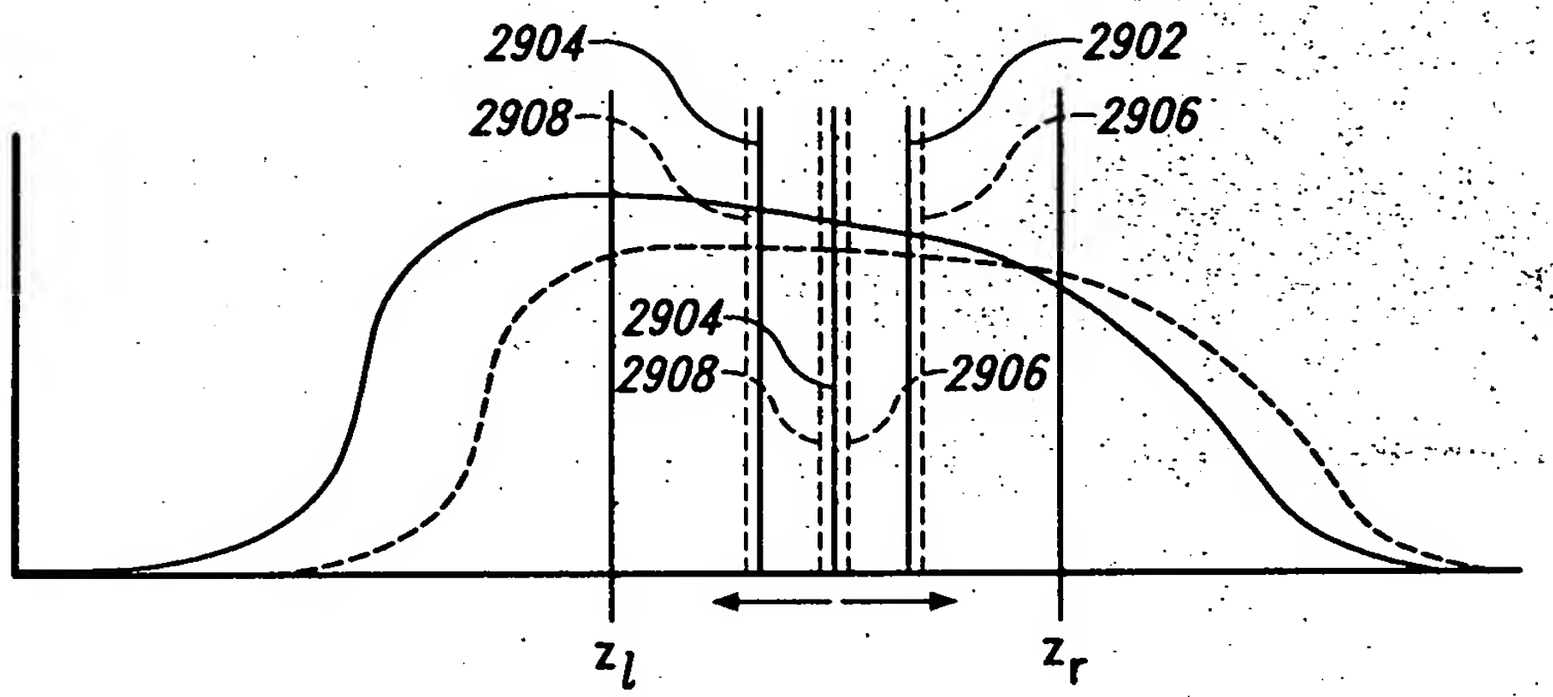

Fig. 29

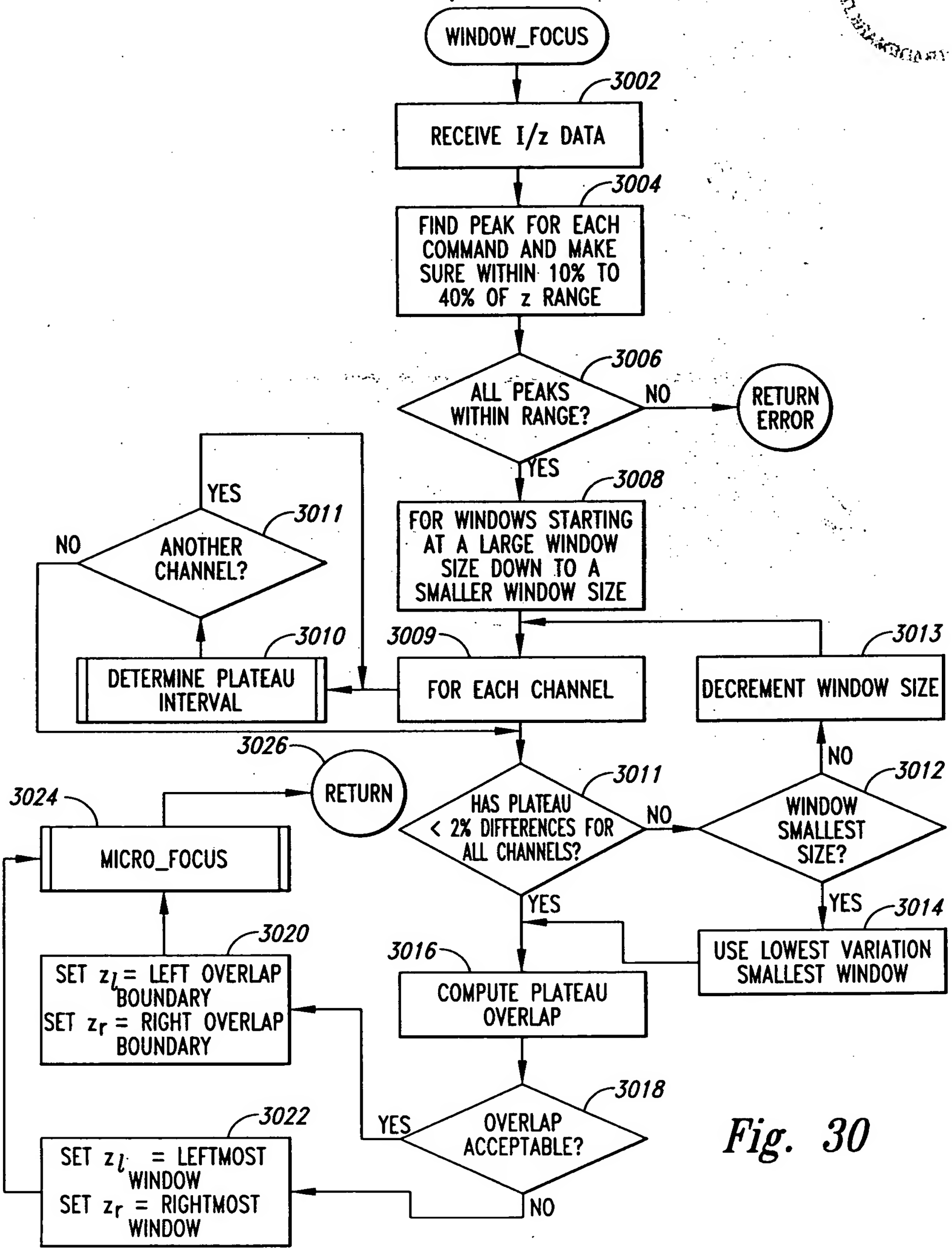
WINDOW_FOCUS
3002
RECEIVE I/z DATA
3004
FIND PEAK FOR EACH COMMAND AND MAKE SURE WITHIN 10% TO 40% OF z RANGE
3006
ALL PEAKS WITHIN RANGE?
NO
RETURN ERROR
YES
3008
FOR WINDOWS STARTING AT A LARGE WINDOW SIZE DOWN TO A SMALLER WINDOW SIZE
3009
FOR EACH CHANNEL
3010
DETERMINE PLATEAU INTERVAL
YES
3011
ANOTHER CHANNEL?
NO
3011
HAS PLATEAU < 2% DIFFERENCES FOR ALL CHANNELS?
NO
3012
WINDOW SMALLEST SIZE?
NO
3013
DECREMENT WINDOW SIZE
YES
3014
USE LOWEST VARIATION SMALLEST WINDOW
YES
3016
COMPUTE PLATEAU OVERLAP
3018
OVERLAP ACCEPTABLE?
YES
NO
3020
SET z_l = LEFT OVERLAP BOUNDARY
SET z_r = RIGHT OVERLAP BOUNDARY
3022
SET z_l = LEFTMOST WINDOW
SET z_r = RIGHTMOST WINDOW
3024
MICRO_FOCUS
3026
RETURN

Fig. 30

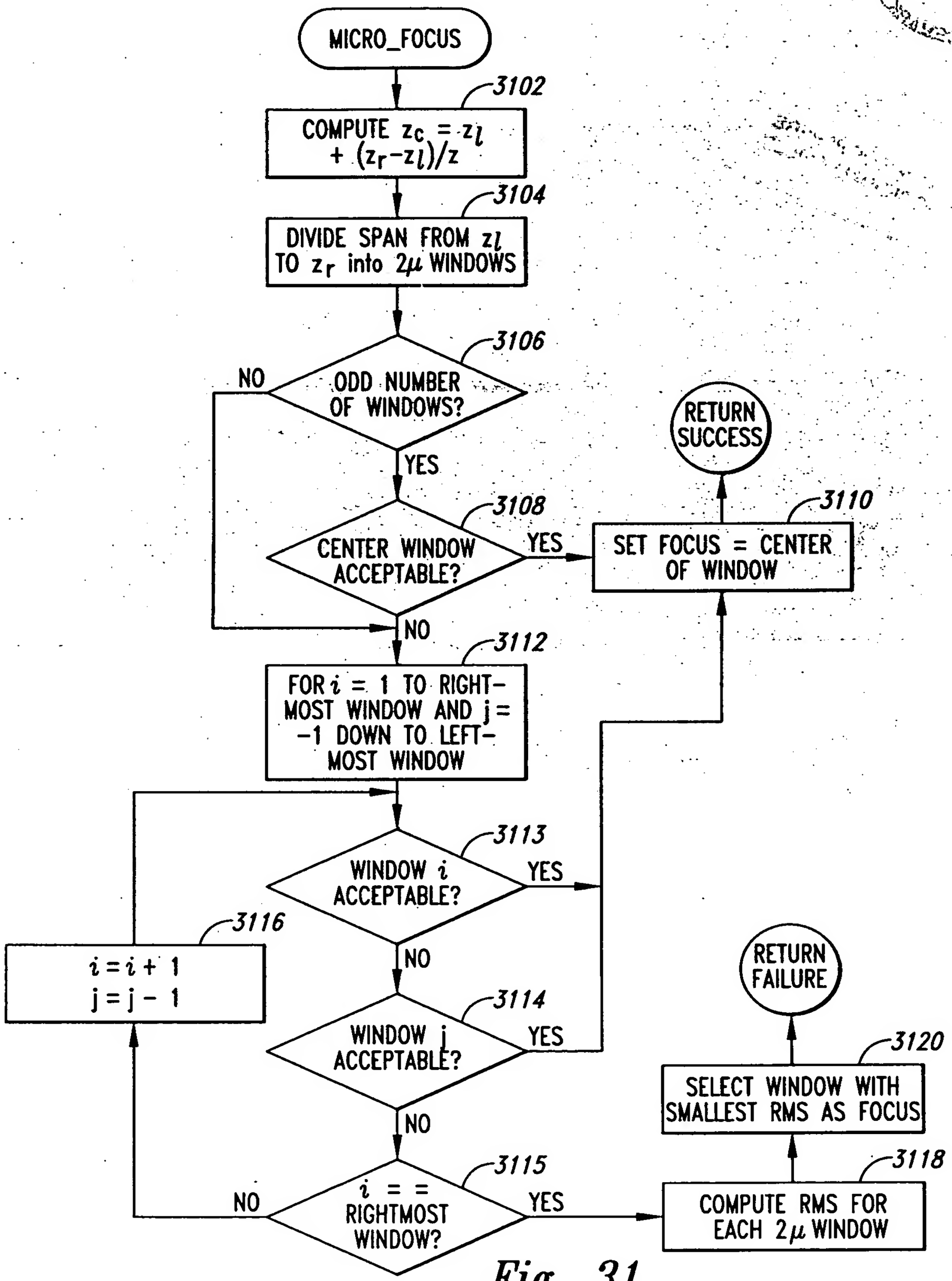
MICRO_FOCUS
3102
COMPUTE $z_c = z_l + (z_r - z_l)/z$
3104
DIVIDE SPAN FROM z_l TO z_r into 2μ WINDOWS
3106
ODD NUMBER OF WINDOWS?
NO
YES
3108
CENTER WINDOW ACCEPTABLE?
YES
NO
3110
SET FOCUS = CENTER OF WINDOW
RETURN SUCCESS
3112
FOR i = 1 TO RIGHT-MOST WINDOW AND j = -1 DOWN TO LEFT-MOST WINDOW
3113
WINDOW i ACCEPTABLE?
YES
NO
3114
WINDOW j ACCEPTABLE?
YES
NO
3115
i = = RIGHTMOST WINDOW?
NO
YES
3116
$i = i + 1$
$j = j - 1$
3118
COMPUTE RMS FOR EACH 2μ WINDOW
3120
SELECT WINDOW WITH SMALLEST RMS AS FOCUS
RETURN FAILURE

Fig. 31